NATIONAL INSTITUTE OF SIDDHA

CHENNAI – 600 047

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI - 600 032

A STUDY ON

CEGANAVAATHAM

(DISSERTATION SUBJECT)

For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH III - SIRAPPU MARUTHUVAM

SEPTEMBER - 2007

CERTIFICATE

This is to Certified that I have gone through the dissertation submitted by **Dr.*M.PRATHIBA*** a student of final M.D.(S) Branch-III, Department of Sirappu Maruthuvam, National Institute of Siddha, Tambaram Sanatorium, Chennai-47 and the dissertation work **"A Study on Ceganavaatham"** has been carried out by individual only. The dissertation does not represent or reproduce the dissertation submitted and approved earlier.

Place: Tambaram Sanatorium, Chennai-47

Date:

Associate Professor and HOD,
Department of Sirappu Maruthuvam,
National Institute of Siddha,
Tambaram Sanatorium, Chennai-47.

ACKNOWLEDGEMENT

The author is extremely grateful to the Almighty for the successful completion of this dissertation work.

The author expresses her sincere thanks to the **Vice- Chancellor**, The Tamilnadu Dr.M.G.R Medical University, Chennai - 32.

The author extends her sincere thanks to **Dr.V.Arunachalam M.D.(S),** Director, National Institute of Siddha, Tambaram Sanatorium, Chennai-47, for granting permission to undertake a study in this dissertation topic and also for providing all the basic facilities in order to carry out this work.

The author is very great pleasure to **Dr.G.Thiagarajan M.D.,(S),** Associate Professor and Head of the Department of Sirappu Maruthuvam, National Institute of Siddha, Tambaram Sanatorium, Chennai-47, for his encouragement, suggestions and valuable guidance in this dissertation work.

The author is very grateful to **Dr.R.S.Ramaswamy M.D.,(S),** Associate Professor, Department of Sirappu Maruthuvam, National Institute of Siddha, Tambaram Sanatorium, Chennai-47, for his suggestions, valuable guidance and support in this dissertation work.

The author is grateful to **Dr.T.R.Siddque Ali M.D.,(S),** Lecturer, Department of Sirappu Maruthuvam, National Institute of Siddha, Tambaram Sanatorium, Chennai-47, for his guidance and support in this dissertation work.

The author owes special thanks to **Dr.K.V.Chandrasekaran M.B.B.S., D.Ortho, M.S.Ortho,** Head of the Orthopaedics Department, **Dr.P.Thirunavukarasu M.B.B.S., D.Ortho, D.Phys.Med&D.N.B(PM&R), Dr.M.Sureshbabu M.B.B.S., M.S.Ortho**,Tutor, **Dr.R.Sundarapandian M.B.B.S., D.Ortho,** Tutor of Department of Orthopaedics, Chengalpattu Medical College hospital, Chengalpattu.

The author expresses her sincere thanks to **Dr.D.Porselvi M.B.B.S., D.M.R.D,** Department of Radiology, Chengalpattu Medical College hospital, Chengalpattu.

The author expresses her thanks to **Mr.P.Jayabal M.Sc.,** Assistant Professor (Statistics), National Institute of Siddha, Tambaram Sanatorium, Chennai -47.

The author expresses thanks to **Dr.S.Venkatraman Ph.D,** Director, C.L.Baid Metha College of pharmacy, Thoraippakkam, Chennai - 96.

The author expresses her thanks to **Mr.Mathan,** Mettex Laboratories of India, Guindy, Chennai-32.

The author expresses her thanks to **Dr.B.Ravindran S.M.P., D.Y.N.,** Agaram hospital, Mathuranthakam.

The author thanks her colleagues and other staff members who helped her in this dissertation work.

The author expresses her hearty thanks also to her friends **Dr.K.Natarajan M.D.,(S),** II year, **Dr.S.Lalitha M.D.,(S),** II year National Institute of Siddha, Tambaram Sanatorium, Chennai -47.

CONTENTS

INTRODUCTION

The Siddha System of Medicine is prevalent in South India, Sri Lanka, Malaysia, and Singapore, where the Dravidian civilization was documented. This system owes its origin to the Dravidian culture which is of the Pre – vedic Period.

Siddha means perfection, Siddhar is the one who has attained immortality. The Siddhars were the ancient Tamils who are in their quest for knowledge for longevity, developed two ways by which man can achieve mastery over nature. One is the yogic way and the other is through medicines. The persons who dedicated themselves to this task were great yogis known as Siddhars. Hence, the system of medicine propounded by them came out to be known as Siddha System of Medicine.

Siddha System is well founded on the basic principles of nature and its elements and it offers a careful and thorough study of the human and animal systems. Siddha science considers nature and human as essentially one. One who knows the secerecy of nature and its five elements, knows well the secerecy of human and nature is the foremost physician.

According to Siddha Medical Science, the universe consists of five elements (Panchaboothas) namely earth, water, fire, air and ether (Aakayam) which correspond to the five senses of the human body.

The three vital forces namely Vali (Vaatham), Azhal (Pittham), Ayyam (Kabam) called as Uyir Thaathukkal are activated by the functions of Punchaboothas. According to the Punchabootha theory all the substances in the universe are created by the actions or reactions of the Punchabootha only.

Ancient Siddhars devoted a lot of time in finding out suitable remedies rather than describing the causes of a disease in detail. The scope of “Kaaya Kalpa” treatment is two-fold: one is to cure degenerative diseases and the other is to prolong the life span. Kalpa serves as an anti- degenerative elixir that can cure even fatal diseases. The Kaaya Kalpa

includes yoga which prolongs the life span and it also includes Vaithiya Muppu which enhances the efficacy of drugs manifold. Even though no modern equipments were available in olden days for research, Siddhars could understand the secret doctrines of the five elements, and could change a base metal into gold. Siddhars' alchemy is called as "Vaathamuppu".

Thokkanam is a special kind of treatment in Siddha System and it is of 9 types – Asaiththal, Izhuthal, Azhuthuthal, Pidithal, Murukkal, Kaikattal, Mallathuthal, Irukkal and Thattal.

Traumatological aspects have also been dealt in Siddha System of Medicine in the name of "Varmam".

Siddha Science, though very ancient, is applicable even to the present modern age.

In Siddha System the diseases are classified into Vaatham, Pittham and Kaba diseases based on the mukkutrams. Vaatha diseases are 80, Pittha diseases are 40 and Kaba diseases are 20 in numbers.

In this dissertation the author speaks about Ceganavaatham which comes under Vaatham 80 and it mimics the signs and symptoms of Cervical Spondylosis.

AIM AND OBJECTIVES

Ceganavaatham is one of the Vaatha diseases with signs and symptoms comparable to cervical spondylosisis. It is a painful and a distressing one involving nape, upper back and upper limbs. It affects the people in their active period of life and causes embarassment both physically and mentally. The clinical study of Ceganavaatham was done in 22 cases admitted and treated in inpatient ward and 38 cases in outpatient Department of Sirappu Maruthuvam at National Institute of Siddha, Chennai - 47.

i) The author has attempted to study in this clinical trial the action of Sarvaangavaatha Chooranam as internal medicine [Reference: Kannusamy Vaithya Chinthaamani] and Vaatha Noii Thylum as external medicine [Reference: Aathmaratchaamirtham Ennum Vaithya Saarasangirakam]

ii) The author has explained the clinical course of Ceganavaatham and its various aspects such as aetiology, signs, symptoms, pathology and complications on the basis of both Siddha and Modern Science.

iii) The author has attempted to do a complete study of this disease under the following topics:

Mukkutra vaerupaadugal – Imbalance or abnormalities of the three thodams.
Udal Thaathukkal – Seven physical constituents
Poriyal arithal – Examination by sense organs
Ennvagai thervugal – Eight types of examination

iv) To observe the incidence of the disease in relation to age, sex, occupation, food and other habits and paruvakaalam (season).

v) To evaluate the drugs by Qualitative, Pharmacological and Toxicological analyses.

vi) To use modern parameters to confirm the diagnosis and prognosis of the disease.

vii) Finally to produce an awareness among the patients about the preventive measures to avoid recurrence and complications of the disease.

CEGANAVAATHAM

DEFINITION:

Ceganavaatham is one of the varieties of Vaatha diseases. It is a condition involving the neck which is identical to the cervical spine, presenting with the symptoms of pain in the nape, radiating pain in the upper limbs, feeling of heaviness of the body, mental depression, giddiness, burning sensation of the eyes and constipation.

-Yugi Vaidhya Chinthaamani- 800

AETIOLOGY:

The common aetiological factors for all types of Vaatha diseases including "Ceganavaatham" have been decribed generally in **Yugi Vaidhya Chinthaamani- 800** and **Agasthiyar Gunavaagadam**.

1. In Yugi Vaidhya Chinthaamani, the following causes have been given:

"தானென்ற கசப்போடு துவர்ப் புறைப்பு
சாதகமாய் மிஞ்சுகிலும் சமைத்த வண்ணம்
ஆனென்ற வாறினது புசித்த லாலும்
ஆகாயத் தேறலது குடித்தலாலும்
பானென்ற பகலுறக்க மிராவிழிப்பு
பட்டினியே மிகவுறுதல் பார மெய்தல்
தேனென்ற மொழியார் மேற்சிந்தை யாதல்
சீக்கிரமாய் வாதமது செனிக்குந் தானே".

- பாடல் 244, பக்கம் 23.

"பகரவே வாதமது கோபித் தப்போ
பண்பாக பெண்போக மதுதான் செய்யில்
நகரவே வெகுதூரவழி நடக்கில்
நளிரான காற்றுமே பனிமேற் பட்டால்
மிகரவே காய்கள் கனிகிழங்கு தன்னை
மிகவருந்தி மீறியே தயிர்தான் கொண்டால்
முகரவே முதுகெலும்பை முறுக்கி நொந்து
முழங்காலும் கணைக்காலும் கடுப்பு உண்டாமே".

- பாடல் 285, பக்கம் 89

1. Consumption of bitter, astringent and pungent food items excessively.
2. Eating food which cooked the previous day
3. Drinking polluted water
4. Changing sleep rhythm
5. Excessive starvation
6. Lifting heavy objects
7. Excessive lust
8. Sexual indulgence
9. Walking long distance
10. Living in chill environment
11. Excessive consumption of tubers, fruits, curd, etc.

2. In Agasthiyar Gunavaagadam:

"தொல்லை செய்ய இன்னும் வெகு வாதநோய்கள்
தொல்லுலகில் மாந்தருக்குக் காண்பதுண்டு
எல்லையில்லை வாதநோய் நேர்மைதன்னை
இயல்பாக அறிந்திடவே விபரங் கேளே"

"விவரமடா அசதிசன்னி மூளை நோவு
விரிவான மூளையது மிருதுவாகி
அவனிதனில் திடமாகப் போவதாலும்
அப்பனே மூத்திரக் குண்டிக்காய் வியாதியாலும்
தவமுனிவர் தீர்காக்கை மேகரோகம்
தன்மையுள்ள முத்தண்டுக் கொடி வியாதி
அவமிலாப் பரிச நரம்பழுத்தங்கண்டாய்
அணுகுமடா வாதநோய் ஆகும்பாரே".

"அணுகுமடா மாமிசத்தின் வியாதியாலும்
அப்பனே சூதகத்தின் பெருக்காலும்
குணமில்லா இரசம் வங்கம் தின்னலாலும்
குடிகெடுத்த வாதமது உண்டாமப்பா".

- அகத்தியர் குணவாகடம்.

1. Tiredness
2. Brain diseases
3. Renal disorders
4. Convulsions
5. Sexually transmitted diseases
6. Diseases of the vertebral column and Spinal cord
7. Menorrhagia
8. Intake of improperly prepared medicines of mercury and lead will cause Vaatha disease.

Kanmavinai is also indicated in the aetiology of Vaatha including Ceganavaatham
The aetiological factors are as follows:

நூலென்ற வாதம் வந்தவகை தானேது
துண்மையாய்க் கன்மத்தின் வகையைக் கேளு
காலிலே தோன்றியது கடுப்ப தேது
கைகாலில் முடக்கியது வீக்கமேது
கோலிலே படுகின்ற விருட்ச மான
குழந்தை மரந்தன்னை வெட்டல்மேல் தோல்சீவல்
நாலிலே சீவசெந்து கால் முறித்தல்
நல்ல கொண்பு தழை முறித்தல் நலித்தல் தானே".

-பாடல் 56, அகத்தியர் கன்ம காண்டம் 300, பக்கம்-23.

"என்னவே வாதந்தா னெண்பதாகும்
இகத்திலே மனிதர்களுக் கெய்யுமாறு
பின்னவே பொன்னதனையே சோரஞ்செய்து
பெரியோர்கள் பிராமணரைத் தூடனித்தும்
வன்ன தேவச் சொத்தில் சோரஞ்செய்து
மாதாபிதா குருவை மறந்த பேர்க்கும்
கன்னவே நிந்தை செய்தால்
காயத்திற் கலந்திடுமே வாதந்தானே".

- பாடல் 243, யூகி வைத்திய சிந்தாமணி 800, பக்கம் -76.

"ஆனான வரன்றனையே மதியாமாந்தர்
அகதி பரதேசியர்கட் கன்ன மீயார்
கோனான குருமொழியை மறந்த பேர்கள்
கொலை களவு பொய்காமங் குறித்த பேர்க்கு
ஊனான சடந்தன்னில் வாதம் வந்து
உற்பவிக்கும் வேதத்தின் உண்மைதானே".

- பாடல் 253, யூகி வைத்திய சிந்தாமணி 800, பக்கம் -78.

1. Cutting trees, peeling of tree bark, cutting tender leaves
2. Breaking legs of animals
3. Abusing the elderly people and priests.
4. Exploitation of charitable properties.
5. Ingratitude to mother, father and gurus
6. Irrespectful attitude towards God
7. Refusing food for destitutes and refugees
8. Involvement in murder, theft, uttering lies and lustful activities.

PATHOPHYSIOLOGY

Changes in lifestyle, occupation, food and habits leads to development of this disease by causing derangement of micro elements in the body (Panchaboothangal). Improper food habits alter the elemental composition directly while the other activities cause derangement of these elements indirectly. When elemental composition is altered Uyir Thaathukkal or the three humours which are made up of these elements naturally get deranged. This simultaneously leads to derangement of seven udal thaathukal, which produces symptoms of Ceganavaatham.

Another theory explains that the aetiological factors for Ceganavaatham are diet that produces excessive Vaayu and other agents which cause vitiation of Vaayu, leading to derangement of Pittham and Kabam.

Here –

Vali + Aahaayam	–	Vaatham
Earth + water	–	Kabam
Fire	–	Pittham

So Vaatham, Pittham and Kabam are deranged and the Udal Thaathukkal get deranged. These changes give rise to clinical features of Ceganavaatham

Uyir Thaathukkal

Vaatham – Commonly affected Vaatham are Viyaanan, Abaanan, Samaanan, Naagan and Koorman.

- Derangement of Viyaanan (Vaayu + Earth) leads to pain in the cervical and dorsal spine, pain along the upper limbs, pain like scorpion sting and heaviness of the body.
- Derangement of Abaanan (Vaayu+ fire) leads to constipation.
- Involvement of Samaanan (Vaayu+ Aahayam) leads to imbalance of functions of other Vaayus.
- Involvement of Naagan leads to sluggishness and mental depression
- Involvement of Koorman leads to burning sensation in eyes, diminished vision.

Pittham – commonly affected Pittham is Saathaga Pittham

- Involvement of Saathaga Pittham - produces the features like mental depression and difficulty in performing regular duties because of the pain in the neck and upper limbs

Kabam – Avalambagam**,** Tharpagam, and Santhigam are affected.

- Involvement of Avalambagam leads to imbalance of functions of other Vaayus.
- Derangement of Tharpagam produces burning sensation in eyes
- Derangement of Santhigam produces pain and stiffness in joints.

Udal Thaathukkal :

Panchaboothas forming the basic constituents of these Thaathukkal get deranged. Commonly affected Udal Thaathukkal are Saaram, Oon, Kozhuppu and Enbu. Nerves and skin are also affected.

Saaram - water + water

Oon - Earth + water

Kozhuppu - Earth + Air

Enbu - Earth + Earth

Narambu - Earth + Vaayu

Thol - Earth + Fire

Gnanenthiriyam

Panchaboothas forming the basic constituents of these Gnanenthiriyams are deranged. Commonly affected Gnanenthiriyams are Mei, Kan.

Mei – Fire + Air,

Kan – Fire + Fire

Kanmenthiriyam:

Panchaboothas forming the basic constituents of these Kanmenthiriyams are deranged.Commonly affected Kanmenthiriyams (organs of action) are Kai, Eruvaai.

Kai - Earth + Vaayu,

Eruvaai - Earth + Earth

CLINICAL FEATURES:

The signs and symptoms of Ceganavaatham are described in the following verses.

- In **Yugi Vaithya Chinthaamani** and **Pararaasasekaram**

"கேளுமே கழுத்தின்கீ ழரைக்கு மேலும்
கெடியான கரமிரண்டு மிகவே நொந்து
வாளுமே சரீரமெல்லாங் கனத்தி ருக்கும்
வாலிபர்க்கு மனங்கண்ணு மயக்க மாகும்
ஏளுமே யிரண்டுகண்ணு மெரிச்ச லுண்டாம்
ஏற்றமாய் மலந்தானு மிறுகிக் காணும்
தேளுமே கொட்டினது போற்க டுக்கும்
செகனவா தத்தினிட தீர்க்கந் தானே"

- பாடல் 280, யூகி வைத்திய சிந்தாமணி, பக்கம்- 87

"கண்டதோர் சிகன்ன வாதங் கழுத்தின் கீழரைக்கு மேலும்
மிண்டலங் கரமிரண்டு மிக நொந்து கனத்திருக்கும்
மண்டியே திமிர்த்துக் குத்தும் வலி மிகுத்துளைவுண்டாகும்
வண்டமர் குழலினாளே மதியினாலுன்னுவாயே".

- பரராசசேகரம்.

1. Pain in the neck
2. Radiating pain in the shoulders and upper limb
3. Heaviness of the body.
4. Mental depression
5. Giddiness
6. Burning Sensation of the eyes
7. Constipation
8. Pain like scorpion sting
9. Tingling sensation and numbness of the upper limbs.

- In **Chikitcha Rathna Dheebam - Part II (Kannusamy Vaithya Chinthaamani)** - Page 61

The clinical features have been described as,

1. Swelling below the neck and above the groin
2. Swelling in both lower limbs
3. Mental depression
4. Burning Sensation of the eyes
5. Retention of urine
6. Pain like scorpion sting all over the body

DIAGNOSIS:

Diagnosis of Ceganavaatham in Siddha is based on,

- Ennvagai Thervu (eight types of examination)

and also on other factors like -

- Uyir Thaathukkal
- Udal Thaathukkal
- Gnanenthiriyam
- Kanmenthiriyam

Ennvagai Thervu (Eight types of examination):

"நாடிப் பரிசம் நா நிறம் மொழி விழி
மலம் மூத்திரமிவை மருத்துவராயுதம்".

"மெய்க்குறி நிறத்தொனி விழி நாவிருமலம் கைக்குறி".

- தேரையர் (நோய் நாடல் பாகம்1, பக்கம் 253)

The eight types of examination are:

1. Naadi (Pulse reading)
2. Sparism (Tactile sensation)
3. Naa (Tongue)
4. Niram (Colour)
5. Mozhi (Speech or Voice)
6. Vizhi (Eye)
7. Malam (Stools)
8. Moothiram (Urine)

General definition for each type	Features in Ceganavaatham
1. Naadi: Naadi means a vital force responsible for birth - Agathiyar This vital force is divided into three humours -Vaatham, Pittham and Kabam. It can be assessed in 10 sites. The commonest site is radial artery.	**In Ceganavaatham** the naadi felt are, Vaatha Pittham Pittha Vaatham Pittha Kabam KabaVaatham -"பொருளான வாதத்தில் பித்தஞ் சேர்ந்து --- கைகால் தறிப்பு நாக்கசக்கு மன்னம். - "பித்தத்தில் வாதமாகில் பிடரியுங் காலுங் கையுங், குத்தது போலேயாகுங் குறுகி மெய்பதுறும் பின்னே, - “பித்தமுமெடுத்துக் கொட்டிப் பிடரியில் நோவதாமே." - “கூட்டியபிடரிதானுங்குன்றவே வலிக்குமாகில்” - நோய்நாடல் பாகம்1, பக்கம் 171, 174,175
2. Sparism: By Sparism the temprature of the body, smoothness or roughness, dryness, hard patches, abnormal growth, sweating, swelling, tenderness and nourishment can be felt.	**In Ceganavaatham** patients: General body temperature – slight warmth Tenderness present in neck & upper extremities
3. Naa: Colour, Coating, dryness, movement, deviation, sensory changes, ulcer, conditions of the tooth and gums are noted.	**In Ceganavaatham** patients: The tongue is coated due to constipation.

4. Niram : Colour of skin, mucous membrane, hair and nail are examined.	**In Ceganavaatham** General colour – mixed colour (thonthaniram due to mixed thodams)
5. Mozhi : Disturbances in voice, hoarseness of voice, etc are assessed.	**In Ceganavaatham** No change or disturbance of voice are found
6.Vizhi: Testing for – acuity of vision, colour – redness, pallor, whiteness, any burning sensation, excessive lacrimation.	**In Ceganavaatham** Burning sensation of eyes is present. In aged patients acuity of vision is diminished.
7. Malam: The waste and excretory products of body are called as malam. The feces should be semi-solid without hardness & looseness. Nature, quantity, colour, odour, froth, presence of blood and mucus are noted.	**In Ceganavaatham** Patients have constipation.

8) Moothiram :

The urine is examined by two methods.

- Neerkuri
- Neikkuri

Neerkuri:

Urine is collected after taking a well balanced diet (Appetite corrected, seasonally correlated), which do not alter the three thodams. It should be examined within 3-3/4 nazhigai.(90 minutes)

"வந்த நீர்க்கரிஎடை மணம் நுரை எஞ்சலென்
றைந்தியலுளவவை யறைகுது முறையே."

- தேரர் நீர்க்குறி நெய்க்குறி நூல் (சித்த மருத்துவாங்கச் சுருக்கம், பக்கம் 334)

In Neerkuri the Niram (Colour), Manam (Odour), Nurai (froth), Eadai (specific gravity) and Enjal (quantity) is noted. Apart from these, the frequency of urination, presence of abnormal constituents such as sugar, Protein etc., and sediments are also noted.

Neikkuri :

The collected urine is kept in a glass bowl and is placed under direct sunlight. A drop of gingelly oil is added and nature of Neikkuri is noted. If the drop of oil lengthens like a snake it indicates Vaatham, if it spreads like a ring it indicates Pittham, if it appears like a pearl it indicates Kabham.

"அரவென நீண்டி னஃதே வாதம்" - நோய்நாடல் பாகம் 1, பக்கம் 279

"ஆழி போற்பரவின் அஃதே பித்தம்" - நோய்நாடல் பாகம் 1, பக்கம் 279

"முத்தொத்து நிற்கின் மொழிவதென் கபமே"- நோய்நாடல் பாகம் 1, பக்கம் 280

When the drop of oil shows two shapes enclosed within one another it indicates Thondha Neer.

UYIR THAATHUKKAL

VAATHAM

Vaatham	Physiological Function	Features in Ceganavaatham
1) Praanan	Inspiration and Expiration responsible for sneezing, coughing and belching	Not affected
2) Abaanan	Acts with downward movement	Affected constipation present
3) Viyaanan	Helps in various movements in our Body and also responsible for sensation	Affected. Restricted neck movements, radiating pain in shoulder and arm, tingling sensation, numbness.
4) Uthaanan	Regulates the higher functions of brain, responsible for physiological reactions like Hiccough and Vomiting.	Not affected
5) Samaanan	Regulates all other Vaayus	Affected Due to derangement of other Vaayus
6) Naagan	Responsible for intelligence, helps in opening and closing of eyes	Affected. Sluggishness and depressive mood in aged patients
7) Koorman	Responsible for lacrimation , helps in visualization of all things of world	Affected. Burning sensation in eyes, in aged patients acuity of vision is diminished
8) Kirugaran	Produces sensation from tongue and nostrils, hunger, sneeze and cough	Not Affected
9) Thevathathan	Responsible for laziness, rotation of eye balls	Not Affected
10) Thananjeyan	Responsible for tinnitus, oedema	-

PITTHAM

1) Anar Pittham	Digests all the ingested particles	Not affected
2) Ranjaka Pittham	Increase the blood & gives color to the blood	Not affected
3) Saathaka Pittham	Execution of work prompted by the mind	Affected. Neck pain and Restricted movement
4) Aalosaka Pittham	Responsible for visual perception of things	Affected in aged
5) Praasaka Pittham	Gives color to skin.	Not affected

KABAM

1) Avalambagam	Controls the other 4 types of Kabam	Affected Santhigam affected
2) Kilethagam	Moistens the food	Not affected
3) Bothagam	Helps to know the taste.	Not affected
4) Dharpagam	Gives cooling effect to the eyes	Affected Burning sensation of eyes present.
5) Santhigam	Gives lubrication to the joints	Affected

GNAANENTHIRIYAM

1) Mei	Feels all types of sensations	Affected. Numbness present in both upper limbs
2) Vaai	Taste	Not affected
3) Kan	Vision	Not affected
4) Mookku	Smell	Not affected
5) Sevi	Hearing	Not affected

KANMENTHIRIYAM

1)Kai	Works done by the hands	Affected Radiating pain, tingling sensation, numbness.
2)Kaal	Walking	Not affected
3)Vaai	Speaking	Not affected
4)Eruvaai	Defaecation	Affected; constipation present.
5)Karuvaai	Reproduction	Not affected

UDAL THAATHUKKAL

1)Saaram	Strengthen the body and mind	Affected. weakness, mental depression
2)Senneer	Preserves brightness, boldness, power and knowledge to the mankind.	Not affected
3)Oon	Gives structure and shape to the boc responsible for body movements.	Early Stage- Not Affected Late Stage - Affected
4)Kozhuppu	Lubricates the joints	Affected Stiffness present
5)Enbu	Gives shape and stability to the boc Products soft internal organs of the body.	Affected Degenerative changes present
6)Moolai	Present in the bones and gives strength	Not affected
7)Sukkilam& Suronitham	Meant for reproduction	Not affected

NOI KANIPPU VIVAADHAM (DIFFERENTIAL DIAGNOSIS)

Some other types of Vaatha diseases mimicking Ceganavaatham are mentioned. Careful and clear history taking and examination will reveal the diagnosis.

They are,

1. Pei Vaatham
2. Kumba Vaatham
3. Kanda kiraga Vaatham
4. Sirakkamba Vaatham
5. Paanikkamba Vaatham
6. Kazhuthu Vaatham (Koonikiraga Vaatham)

1. **PeiVaatham (பேய் வாதம்)**

"பெற்றியாம் பெருமையாங் காலுங் கையும்
பெருவயிறு நெடுஞ்சோடு விரலு மூக்கு
ஏற்றியா மெறிகழுத்து மெங்கும் பற்றி
ஏக்கமாய் நொந்துவுடம் பெங்கும் வீங்கி
உற்றியா முணவே நிமிர்த்தெ டுத்து
உறுதியாய்ப் பிடிக்கவு மொணாம லாகும்
சக்தியாய் வாய்கசந்து மயக்க மாகும்
தரித்திடவொண் ணாதுபேய் வாதந் தானே".

- பாடல் 276, யூகி வைத்திய சிந்தாமணி - 800, பக்கம் 86

The clinical features are,

1. Pain and swelling in neck, abdomen, upper and lower limbs
2. Weakness of hand muscles, difficulty in holding things in the hand
3. Vomiting
4. Giddiness
5. Swelling all over the body

2. Kumba Vaatham (கும்ப வாதம்)

"நவிலவே தோள்மீதுங் கரகத்தின் மீதும்
நலிந்து மெத்த வாகியே நசவுண்டாகும்
கவிலவே கன்னமொடு நயனந் தானும்
கடுத்துமே விறுவிறுப்பு மெரிவுங் காணும்
துவிலவே துடிப்பாகுஞ் சிரசு தன்னிற்
சுழற்றியே நாபிக்கீழ் வலியு முண்டாய்
அவிலவே யடிநாக்கி லழன்று காணும்
அலருமே வருகும்ப வாதந் தானே".

- பாடல் 264, யூகி வைத்திய சிந்தாமணி - 800, பக்கம் 82

The clinical features are,

1. Burning pain in shoulder and upper limbs
2. Burning sensation in the cheek and eyes
3. Twitching over the scalp
4. Spasmodic pain in the lower abdomen
5. Glossitis

3. Kanda Kiraga Vaatham (கண்ட கிரக வாதம்)

"வகையான குரலதனைப் பற்றி நொந்து
மாரோடு பிடரியினில் வலியுண்டாகி
நுகரான சரீரமெல்லாம் நொந்த ழற்றி
நுணுக்கமாய்ச் சுவாசமது புறப்ப டாமல்
முகையான நாவாதே மூச்சு மாறி
முகத்திலே வியர்வாகி விலாநோ வுண்டாம்
பகையான வன்னத்தைப் பருகொட் டாது
பரிய கண்ட கிரகத்தின் பண்பு தானே".

- பாடல் 303, யூகி வைத்திய சிந்தாமணி - 800, பக்கம் 95

The clinical features are:

1. Pain in the throat, chest and occipital region and all over the body
2. Breathing through mouth
3. Backache
4. Sweating on face and pain in ribs
5. Loss of appetite

4. **Sirakkamba Vaatham (சிரக்கம்ப வாதம்)**

"தம்பமாய் உதிர்கண்ட நரம்பிற் புக்கித்
தலையோடு சரீரமெல்லாந் தாக்கிப் புக்கும்
கம்பமாங் காதிரண்டு மிகவுங் கேளா
கையோடு காலிரண்டும் வசக்கே டாகும்
நிம்பமாய் நினைவேதான் கலங்கிக் காணும்
நெடுமூச்சுங் கொட்டாவிநித் திரையு மாகும்
சிம்பமாய்த் தலைநடுங்கிக் கனப்பு முண்டாம்
சிரக்கம்ப வாதமென்றே செப்ப லாமே".

- பாடல் 300, யூகி வைத்திய சிந்தாமணி - 800, பக்கம் 94

The clinical features are

1. Stiffness of neck
2. Deafness
3. Difficulty in using lower and upper limbs
4. Confused thinking / impaired memory
5. Difficulty in breathing
6. Yawning, excessive sleeping
7. Tremor in the head and neck

5. Paanikkamba Vaatham (பாணிக்கம்ப வாதம்)

"மார்க்கமாய் வாய்வு மாய் மெய்நி றைந்து
வயிறுதனிற் பசியிலா தூணு மற்று
நார்க்கமாய் ஞாலத்து நடக்கை யற்று
நடுக்கமாங் கையிரண்டுந் திமிரு முண்டாம்
ஊர்க்கமா யுறக்கமில்லா துணர்ச்சி யற்று
உதறியே சரீரமெங்கு முலர்ந்து காணும்
பார்க்கமாய் வாய்விட்டு அலத்த லாகும்
பாணிக்கம்ப வாதத்தின் பாங்குதானே".

- பாடல் 266, யூகி வைத்திய சிந்தாமணி - 800, பக்கம் 83

The clinical features are,

1. Gaseous accumulation and anorexia
2. Tingling sensation and numbness of upper limbs
3. Tremor of upper limbs
4. Sleeplessness and
5. Dryness all over the body

6. Kazhuthu Vaatham (Koonikiraga Vaatham)

கழுத்துவாதம் (கூனிகிரக வாதம்)

"கழுத்தை திருப்பாதே பிடித்து
கதிரிட்டு உளைந்தாற் போலே காணும்
செழித்தே நரம்பு தடித்து நிற்கும்
சீராக அசைக்க வொட்டாது
இழுத்தே பிடித்து இராப்பகலும்
இடரே செய்யும் கழுத்து வாதம்
வழுத்தும் குணங்கள் தரணி தன்னில்
வகையாய் அறிவீர் பண்டிதரே."

- வாதநோய் மருத்துவம், பக்கம் 89

The clinical features are

1. Stiffness and restriction in movements of the neck
2. Boring pain in neck
3. Thickening of nerves in neck
4. Symptoms continue day and night

THE ANATOMY

The Vertebral Column:-

The vertebral column which lodges and protects the spinal cord, its meninges, and the continuation of the central nervous system lies in the dorsum of the body. It forms a pillar which contains 33 segments and lengths about 70cm in an average male and 60cm in a female. It supports the body weight and transmits it to the ground through the lower limbs.

The segments can be divided into cervical, thoracic, lumbar, sacral and coccygeal segments. The cervical segment has seven vertebral bones, thoracic twelve, lumbar five, sacral five and coccygeal four. All are separate bones except the sacrum and coccyx.

The Curvatures of the Spine:-

There are four curvatures in the vertebral column. They are two primary and two secondary curvatures.

The primary curvatures are the thoracic and the sacral. They are convex posteriorly. The secondary curvatures are the cervical and lumbar. They are anteriorly convex. The cervical curvature becomes prominent when the child is able to hold its head up and fit upright. The lumbar curvature appears by 12-18 months after the child starts walking. A slight lateral curvature is seen in the upper thoracic region. It is curved to the right in right handed persons and vice versa.

The General features of the Vertebrae:-

The vertebrae can be divided into vertebral body and a dorsal vertebral arch. The vertebral arch has 2 pedicles, 7 processes and 2 laminae. Pedicles are thick bars projecting backward from the body. The laminae are vertical plate like structures, fuses together to form spinous process. The spinous processes projects downwards and are the lever for the muscles. The articular processes are four in number, bearing the articular facets and articulate with the adjacent vertebrae. Transverse processes project laterally from the junction of pedicle and laminae. In thoracic region they articulate with ribs.

The Cervical Vertebrae:-

The cervical segment of vertebral column contains 7 vertebrae. The cervical spine is divided into anterior & posterior columns. The component parts of anterior columns are

- Anterior longitudinal ligament (ALL)
- Annulus fibrosus (ANN)
- Unco vertebral joint

Posterior column consist of

- Nerve root (NR)
- Facet
- Superior ligament
- Posterior longitudinal ligament

There are 8 pairs of cervical Nerves. Each nerve root contains sensory, motor, sympathetic fibres that innervate the upper extremities. The first, second and the seventh Cervical Vertebrae are atypical and the third to sixth are typical. They are smaller and delicate than the thoracic and lumbar vertebrae. All the cervical vertebrae have a foramen in the transverse process known as foramen transversarium. This is identical to the cervical vertebrae.

Typical Cervical Vertebrae:-

1. **Body:**

   It is small and oval. It's superior surface is concave transversely with upward projecting lips on each side and its inferior surface is saddle shaped, convex from side to side and concave from before backwards.

2. **Vertebral Foramen :-**

   It is larger than the body and triangular.

3. **Vertebral Arch :-**

   i. **Pedicles :**

   These are short and directed outwards and backwards from the middle of postero lateral parts of the body and they form the postero medial wall of the foramen transversarium.

ii. Laminae :

These are long and narrow, being thinner above than below.

iii. Articular Facets :

The superior and inferior articular processes form the articular pillars which project laterally at the junction of the pedicle and the laminae. The superior articular facets are flat and directed backwards and upwards. The inferior articular facets are also flat but directed forwards and downwards.

iv. Transverse Processes :-

Each transverse process is short and pierced by foramen transversarium. Each process has an anterior and posterior root which ends in tubercles joined by the costotransverse bar. The anterior tubercle of the sixth cervical vertebra is large and is called carotid tubercle.

v. The Spine :-

It is short and bifid.

Foramen Transversarium:-

It transmits the vertebral artery, vertebral veins and sympathetic plexus.

The Atypical Cervical Vertebrae:-

1. Atlas :-

It is the first cervical vertebrae which lodges the skull. It has no body and spine. It has anterior and posterior arch, right and left lateral masses and transverse processes. The anterior arch bears an anterior tubercle in the anterior aspect. Its posterior aspect bears an oval facet which articulates with dens. The posterior surface of the posterior
arch has a median posterior tubercle. The two lateral masses bear an elongated superior articular facet for atlanto-occipital joint and an inferior articular facet for atlanto axial joint.

The transverse process of atlas is long and thick. It is pierced by the foramen transversarium.

2. The Axis :-

The Axis has a peg like projection in its upper part of the body known as the dens (or) odontoid process. It has a circular facet anteriorly articulating with atlas. There are two articular facets on either side of the dens on the upper surface of the body. The laminae are thick. The spine is large and bifid. The transverse process is small and possesses a tubercle in its tip.

3. The Seventh Cervical Vertebrae :

It is also known as "Vertebral Prominent". The transverse process does not posses anterior tubercle. The foramen transversarium is small (or) absent. It transmits accessory vertebral vein only. The spine is long.

Palpable parts of Cervical Vertebrae:-

i. The spine of C_2 is in the nape of the neck 5 cm, below the external occipital protruberance.
ii. The spine of C_7 where the collar bone crosses the posterior medium line of the neck.
iii. The transverse process of C_1 through the anterior border of sternocleidomastoid, immediately below the tip of the mastoid process.

Inter- Vertebral Discs:-

They are fibro cartilagenous discs interposed between the adjacent surfaces of the vertebral bodies. They are thicker in lumbar region than in thoracic. Their peripheral parts are supplied by the adjacent blood vessels but the central parts are avascular.

They receive their nutrients by diffusion from spongy bone of adjacent vertebrae.The central portion of disc is known as **Nucleus Pulposus** and the peripheral zone is know as **Annulus Fibrosus**. The central portion is made up of gelatinous mucoid material and it is composed of around 80-90% water. . On aging it is converted into fibro cartilagenous material and its water binding capacity is reduced. Annulus Fibrosus (outer ligamentous ring) which hydraulically seals the nucleus and this annulus fibrosus contains collagen bundle in periphery & fibro cartilaginous tissue in the inner part.

The annulus has overlapping radial bands, not unlike the plies of a radial tire. The thickness of the discs varies daily. In the morning it is thick due to absorption of fluids in lying posture and it is thin at night.

Intervertebral Discs – Physiology

1) As a spacer:

Proper spacing of intervertebral disc allows the intervertebral foramen to maintain its height, which allows the segmental nerve roots to exit spinal level without compression.

2) As a shock absorber:

3) As a motion unit:

The elasticity of the disc allows motion coupling. So that the spinal segment can flex, rotate, and bend to the side all at the same time during a particular activity.

4) As a hydraulic cylinder:

The annulus interacts with the nucleus. As the nucleus is pressurized the annular fibres serve a containment function to prevent the nucleus from bulging or herniating. The gelatinous nuclear material directs the forces of axial loading outward & the hoops of annular fibres help to distribute that force without injury.

Joints of the Vertebral Column:-

The vertebrae from the 2nd cervical to 1st sacral are articulated to one another by a series of cartilagenous joints between vertebral bodies and a series of synovial joints between the vertebral arches. The vertebral bodies are united by anterior posterior longitudinal ligaments and by centevertebral disc of fibrocartilage.

1. **Atlanto Occipital Joint :-**

   It is a synovial condyloid variety.

   Articular ends:-

Superiorly	-	Occipital condyles.
Inferiorly	-	Superior articular facet of the atlas.
Adjacent structures	-	Ligaments, capsule, anterior & posterior occipital membranes.
Blood supply	-	Vertebral artery
Nerve Supply	-	First cervical nerve

Ligaments:-

1. Capsular ligament
2. The Anterior Atlanto-occipitial membrane.
3. The posterior Atlanto-occipital membrane.

Movements:-

Flexion, extension, and slight lateral flexion are possible.

2. Atlanto Axial Joints :

Comprise of

a. A pair of lateral atlanto-axial joints.

b. Median atlanto-axial joint.

a. Lateral atlanto-axial joints

Synovial joint	- Plane variety
Articular ends	- Inferior facets of atlas and the superior facets of axis.
Ligaments	- Ant. longitudinal ligament and ligamentum flavum

b. Median atlanto-axial joint.

Synovial joint	- Pivot variety
Articular ends	- Between the dens of axis, antrier arch of atlas
Ligaments	- Transverse ligament
Movement	- Rotatory movements around a vertical axis

Ligaments between axis and the occipital bone:-

1. Membrana tectoria
2. Cruciate ligament
3. Apical ligament of dens
4. Linear ligament

The Unco Vertebral (Luschka's) Joints:-

Luschka's joints are not true synovial joints; which develop as a result of degenerative changes in the edges of the disc in early adult.

Luschka's joints are important, because

i. They are the commonest site of osteophyte formation. The osteophytes may compress the cervical nerves.

ii. Vertebral artery lies lateral to the joints intruding on the canal can cause distortion of the artery and leads to Vertibro Basilar Insufficiency in athero-sclerotic vessels.

Movements of the Vertebral Column:-

The greater thickness of the discs in the cervical and lumbar regions as compared with the thoracic region is associated with the greater individual range of movements occurring in thoracic regions.

Flexion (or) forward bending, extension (or) backward bending, lateral flexion and rotation are possible in vertebral column. Numerous muscles are attatched directly on the vertebrae.

Movements of the Head and Neck:-

Movements	**Muscles**	**Nerve Supply**
Flexion	Sternocleidomastoid	Accessory ventral rami of cervical spinal nerves C_2.C_3,C_4
	Longus Coli	Cervical ventral rami $C_2 – C_6$.
	Longus capitis	Cervical ventral rami $C_1 – C_3$
	Rectus capitis Anterior	C1 ventral ramus
Extension	Splenius cervicis and capitis	Dorsal cervical nerve
	Erector spinae	Dorsal rami
	Rectus capitis posterior major and minor	Dorsal rami C_1
	Obliques capitis Superior,	C_1 – Dorsal ramus
	Trapezius	Accessory
Lateral flexion and rotation	Sternocleido mastoid	Accessory, ventral rami of cervical spinal nerves C_2,C_3,C_4
	Scalene	Cervical ventral rami $C_3 – C_8$
	Longus Coli	Cervical ventral rami $C_3 – C_8$
	Levator scapulae	Cervical ventral rami C3, C_4, C_5
	Rectus capitis	C_1 – ventral ramus
	Splenius	Cervical dorsal ramus
	Longismus obliques capitis superior and inferior.	C_1 Dorsal ramus.

Structures passing through:

a. Foramen transversarium

Vertebral artery, Vertebral vein, Plexus of sympathetic nerve

b. Intervertebral foramen

Spinal nerves form dorsal medulla

Blood supply of Vertebral Column:-

The vertebrae and longitudinal muscles attached to them are supplied by segmental arteries. The arteries give multiple small branches to the vertebral bodies. The extensor muscles of neck are supplied by the occipital, deep cervical and transverse cervical arteries.

Venous Drinage:-

The Internal vertebral venous plexus lies within the vertebral canal, but outside the spinal dura. It received tributaries from

i. The vertebrae through the basilo vertebral veins.
ii. The meninges and the spinal cord.

The internal vertebral venous plexus is drained by the intervertebral veins, which pass out through the intervertebral foramen. Here they are joined by the tributaries from the external vertebral and sacral veins. The internal venous plexus communicates with the occipital and basilar veins through the foramen magnum.

CERVICAL SPONDYLOSIS

Nomenclature

Cervical	-	Neck region
Spondylosis	-	Vertebral ankylosis

Synonyms and related keywords:

Cervical Degenerative Joint Disease, Cervical Degenerative Disk Disease, Cervical Osteoarthritis, Cervical Spondylotic Myelopathy, Disk Degeneration, Degenerative Cervical Disease, Osteophytic Bars, Cervical Radiculopathy.

Definition:-

Cervical spondylosis is a disorder characterised by increasing degeneration of the intervertebral disc, with subsequent changes in the bones and soft tissues. Spondylosis is usually asymptomatic. Symptoms are usually manifested by encroachment on local neural elements such as cervical nerve roots, spinal cord, vertebral artery (or) sympathetic nerves. The symptoms and signs appear to be related to the cause and time course of compression as well as the structures being compressed.

Epidemiology:

Age: Cervical spondylosis is present in 5 – 10% over the age of 20 to 30 years, 20-25% by the age of 50 years and 70-85% by the age of 65 years.

Sex: Men are affected more than women.

Location:

- C5-C6 levels are commonly involved due to maximal movements occurring at this cervical spine.
- However C6-C7 and C4-C5 can also be affected at times

AETIOLOGY

I. Degenerative Causes

They are primary & secondary

- Primary - Senility, genetic factors, metabolic factors and manual labour
- Secondary - osteoarthritis, rheumatoid arthritis, metastatic carcinoma or lymphomas of the spine and TB spine.

II. Injury

- Automobile accidents with "Whiplash" injury, athletic injury,
- Sudden jerks on the arms during fall down,
- Previous injury with fracture or disc prolapse

III. Occupational causes

The physical discomfort, which arises through an occupation is occupational stress. The physical strain, intensity of work and duration of working hours all constitutes the occupational strain

IV. Hereditary factors

- Congenital narrowing of the cervical spinal canal (myelopathy is often seen when canal's sagital diameter is 12 mm or loss)
- Segmental defects – Hemi vertebra, fused vertebra.

V. Aquired narrowing of cervical spinal canal due to

- Osteophytes
- Ossified posterior longitudinal ligament (OPLL)
- Facet joint hypertrophy (results foraminal stenosis & compression of foot of radicular artery)
- Hypertrophied ligamentum flavum (Compress the cord during extension).

VI. Outgrowths of bone that some times occur with aging.

VII. Inter vertebral disc protrusions are commonest in the cervical region which is due to degeneration of the intervertebral disc and if it involves several discs with osteoarthrosis liable to interfere with blood supply of the cord and thus leads to further damage.

PATHOLOGY

In cervical spondylosis, involvement of following structures has to be considered:

- Intervertebral disc
- Uncovertebral joints
- Apophyseal joints
- The foramina(intervertebral) and
- The transverse foramina.

Intervertebral disc

All the three parts of disc cartilage plate, nucleus and annulus are involved.

Cartilage plate:

First the cartilage plate thins out and cracks. Fissuring and erosion is common. The whole plate is replaced by fibrous tissue.

Nucleus:

Nucleus becomes fibrous with degeneration. The process of dehydration occurs and concludes with reduction in water binding mucoprotein.

Annulus:

Annulus undergoes some changes as in nucleus. Focal necrosis and calcification is common. They form hard ridge within the cervical canal. Osteophytes are formed as a result of instability producing stress on the periosteum.

Uncovertebral joints

The uncovertebral joints are most affected as C5-C6 and C6-C7 levels. Progressive decrease in disc height the uncinate process approximates against the vertebral body undergoes erosion and formation of osteophytes.

Apophyseal joints

They may remain unaffected for long time. When they subjected to heavy weight pathological changes like erosion, degeneration, lipping, and osteophyte formation occurs.

The foramina (intervertebral and transverse)

Foramina are narrowed by fibrosis and posterior longitudinal ligament thickening which is not obviously seen on radiography.

Vertebral Artery

Spondylotic changes in the foramina transversarium are not uncommon. They can cause buckling or tortuosity of the vertebral arteries which is commonly found in older age group. The artery may also be affected by uncovertebral and apophyseal osteophytes. Vertebral artery compression is most common at C4/5 and C5/6 levels.

PATHOGENESIS

1. Cervical spondylosis is very common and histological evidence of degenerative changes is present in virtually, even present over the age of 70.

2. The disc degeneration the primary event which is a progressive decrease in the degree of hydration. Glycoproteins diminish in size and number and their ability to retain water diminishes. This results in loss of disc height, disc fibrosis and annular weakening. Adjacent vertebral bodies approximate each other and uneven abnormal movement in the affected areas probably results in oseteophyte formation. These occur at all the joints, namely the disc, zygoapophyseal joints and the neurocentral joints of luschka. Though osteophyte formation may be the body's attempt to stabilize the joints their growth.

3. Osteophytes may form posteriorly with osteoarthritis of the apophyseal joints and also anteriorly in relation to degenerative changes and narrowing of the intervertebral disc with sclerosis of the bony end plates. The osteophytes may cause symptoms by encroaching on the spinal nerve foramina or in narrowing of the spinal canal and cord compression or in the cervical regions on the vertebral artery foramen. In the cervical region intermittent pain and discomfort may be followed eventually by stiffness and limitation of movements.

4. The **predisposing factors** which may accelerate of these changes viz.

    - Occupation requiring repetitive motion and chronic flexion of the
    - Previous injury with fracture or disc prolapse.
    - Segmentation defects like hemivertebrae or fused vertebrae.
    - May be a hereditary predisposition to intervertebral disc disease.

5. Factors responsible for Myelopathy in cervical spondylosis:

- Uncovertebral osteophytes cause anterior compression of cord
- Bony ridges on the posterior vertebral bodies cause central compression on the cord.
- Zygapophyseal osteophytes causing posterior compression
- In curving of the ligamentum flavum causing posterior compression on the cord
- Development of narrow cervical canal
- Dynamic effect of narrowing of the cervical canal
- Calcification of the posterior longitudinal ligament
- Teethering of the roots to the osteophytes
- ArachNoiditis, postoperative scar
- Interference of blood supply of cord.

CLINICAL FEATURES

Sympotms and Signs:

Symptoms and signs of cervical spondylosis can be acute, subacute or chronic occasionally acute exacerbation of chronic symptoms can occur.

Symptoms:

Symptoms can be described as

1) Neck pain
2) Radiculopathy
3) Headache
4) Myelopathy
5) VBI [Vertebro Basilar Insufficiency]
6) Autonomic symptoms

1) Neck pain:

Pain is present in nape of the neck and its nature is aching or boring quality, which radiates to the shoulder blades top of the shoulder, upper arm and hands or back of the head. Clinically it is very difficult to decide, which disc is responsible to pain. Patients feel of crunching sounds with the movement of the neck or shoulder muscles.

2) Radiculopathy:

Results from nerve root compression and consists of shooting pain (pins and needles) radiating along the dermatomal distribution of particular nerve root usually into forearm or fingers. There is also frequently referred pain and tenderness along the scapula's medial border.

3) Headache:

Headache is a common symptom; its pathogenesis is not fully understood. It is more a pain than a headache usually located in occipit on bothsides. It spreads to the temple or eyes. It is described as a tight band round the head.

4) Myelopathy:

Myelopathy can be classified in varies ways and depends on the involvement of the lateral or medial cord or vascular involvement. The signs may be a mixure of upper motor neuron signs in the lower limbs and lower motor neuron signs in the upper limbs.

Generally myelopathy may be predicated by central disc herniation, but is more commonly the result of spondylytic change superimposed on a congenitally narrow cannal. Motor weakness is rare. If they occurs there may be marked wasting of the muscles.

5) VBI [Vertebro Basilar Insufficiency]:

VBI usually requires a combination of arterosclerosis & osteophytes intrusion into the foramen transversorium. The symptoms of this insufficiency are typically a brief attack of giddiness without loss of consciousness and generally brought by head movements.

6) Autonomic symptoms:

Vertigo, flushing, tinnitus & visual blurring are the autonomic symptoms produced by cervical disc diseases. These may be mediated by sympathetic distribution to the sinuvertebral nerves from stellate ganglion.

Signs:

1. Motor

- Atrophy of the hand musculature (Intrinsic muscle atrophy)
- Muscle weakness

2. Sensory

Loss of vibratory sense or proprioception in the extremites especially in the feet, superficial sensory loss.

3. Reflexes

- Hyper reflexia
- Ankle clonus

4. Babinski's sign

5. Lhermitte's sign positive (Electric shock like sensations down to the center of the back following flexion of the neck)

Summary of the site of lesion

Cervical spondylosis can produce cord compression (upper motor neuron signs) or root compressions (lower motor neuron signs)

C5	Motor	Raised elbows (axillary n.)
	Reflex	Biceps (musculocutaneous n.)
	Sensory	Upper, lateral arm, near/over deltoid (axillary n.)
	Pain	Upper, lateral arm, never below elbow
C6	Motor	Elbow supination (radial n.) / pronation (median n.)
	Reflex	Brachioradialis (radial n.)
	Sensory	Lateral forearm (musculocutaneous n.)
	Pain	Lateral forearm, possibly into thumb
C7	Motor	Elbow extension (radial n.)
	Reflex	Triceps (radial n.)
	Sensory	Over triceps, mid-forearm, and middle finger
	Pain	Deep pain in triceps, front, and back of forearm & into middle finger
C8	Motor	Thumb index pinch (ant.interosseus n. off median n. at the elbow)
	Sensory	Medial forearm (antebrachial cutaneous n.)
	Pain	Medial forearm, into the 2 medial fingers
T1	Motor	Finger abduction (ulnar n.)
	Sensory	Medial arm (brachial cutaneous n.)
	Pain	Deep pain in axilla & shoulder / some radiation down inside of arm.

DIAGNOSIS

Mainly based on X – ray

1) X- ray cervical spine

- Anteroposterior (AP) view
- Lateral view
- Right oblique
- Left oblique
- AP odontoid view

Plain x-rays can demonstrate loss of disc space height, anterior and posterior end-plate osteophytes, fusion or instability. A lateral view will also show the antero-posterior diameter of the spinal canal; and if this is less than 14 mm then cord compression is a real possibility.

2) **CT scan**

A CT scan of your spine uses X- ray technology, but produces a more detailed image than X- ray can.

3) **Myelogram**

This test involves generating images using X-rays or CT scans after dye is injected into the spinal canal. The dye makes areas of your spine more visible.

4) Electromyography(EMG) and Nerve conduction study

Needle EMG, nerve conduction studies and evoked potentials may help to differentiate spondylotic neurological problems from motor neurone disease, multiple sclerosis, peripheral nerve compression and so on.

5) MRI (Magnetic Resonance Imaging)

MRI uses a magnetic field and radio waves and can produce detailed, cross-sectional images of your spine. These tests may help your doctor determine the extent of damage to your cervical spine.

DIFFERENTIAL DIAGNOSIS

1. Motor neuron disease
2. Multiple sclerosis
3. Syringomyelia
4. Spinal cord tumors
5. Tropical spastic paresis from HTLV – 1 infection
6. Amyotrophic lateral sclerosis
7. Carcinomatous infiltration or radiotheraphy
8. Peripheral nerve lesions (distal ulnar or median nerve)
9. Reffered pain
    - Cardiac ischaemia
    - Sub-diaphragmatic lesions
    - Gall bladder lesions

COMPLICATIONS

1. Cord compression- Quadriplegia, spastic gait, affecting the bladder.
2. Nerve root compression – Neurological injury, Brachialgia.
3. VBI [Vertebro Basilar Insufficiency]

TREATMENT OF CEGANAVAATHAM

Treatment – Directed towards relief of untoward symptoms, leaving cure of the disease to natural forces.

நோய்நாடி நோய்முதல் நாடி அதுதணிக்கும்
வாய்நாடி வாய்ப்பச் செயல். - திருக்குறள்

உற்றான் அளவும் பிணியளவும் காலமும்
கற்றான் கருதிச் செயல். - திருக்குறள்

As per Thiruvalluvar, after diagnosis and finding the etiology, a physician prescribes the line of treatment based on patient's condition, condition of the disease and climatic condition.

For Ceganavaatham patients, the following line of treatment is given,

- Purgation
- Internal Medicine
- External Medicine
- Patthiyam
- Thokkanam
- Exercise
- Kanmaneekkam

Purgation:

"விரேசனத்தால் வாதம் தாழும்" - நோய்நாடல் பாகம் 1, பக்கம் 248

"அறிந்திடும் வாதம் அடங்கு மலத்தினில்" - சித்த மருத்துவாங்கச் சுருக்கம் பக்கம் 97

Purgation is used to normalize the vitiated Vaatham and eliminate other toxic products of digestion, metabolism and catabolism.

Purgative medicine: Sitthaathi ennai – 15 ml with Sombu kudineer at early morning on first day only.

Internal medicine:

Sarvaangavaatha Chooranam – 1½ gm, twice a day with hot water.

External medicine:

Vaatha Noii Thylum – 30 to 50 ml

Patthiyam:

Dietary regimen (or) regulation of diet.

The sort of diet to be observed either simple or rigorous depends on various factors such as patient's strength and nature, nature of the disease, quality of medicine, time, climate etc.

The greatness and usefulness of observing diet,

"பத்தியத்தாலுண்டாகும் பண்டிதற்குப் பேராண்மை
பத்தியத்தாலுண்டாகும் பண்டிதங்கள் - பத்தியத்தை
விட்டார் பிணிவகைகள் வித்தரிக்கும் விட்டிடலை
விட்டாற் பறக்கும் வினை"

- தேரன் வெண்பா செய்யுள் 600(T.V. சாம்பசிவம்பிள்ளை, Vol V பக்கம் 139)

Patthiyam supports the treatment and produce successful result.

Substances that should not be consumed are:

"புளிதுவர் விஞ்சுங்கறி யாற்பூரிக் கும்வாதம்
ஒளி யுவர்கைப் பேறில் பித்துச் சீறும் - கிளிமொழியே
கார்ப்பினிப்பு விஞ்சிற் கபம்விஞ்சு ஞ்சட்டிரதச்
சேரப் புணர் நோயணுகாதே".

- பதார்த்த குணசிந்தாமணி (நோய்நாடல் பாகம் 1, பக்கம் 22)

"இலவணம் புளிகடுவெண் ணாலு முதலாக
வொவொரு குணமா யொழிவாயே - நவிலிறைச்சி
கூழ்ப்பாண்ட மச்சம் பெண்கோத்திரங் கொள்பிரமபத்திரி
தீழ்ப்பாகி மெத்தவிது சீ".

- தேரன் வெண்பா 601 (T.V. சாம்பசிவம்பிள்ளை, VOL V பக்கம் 141)

Salt, tamarind, mustard, gingelly - any of them should be prohibited as warranted by the medicine taken. Further flesh, fish ash, pumpkin, tobacco, horse gram, and lustful activities should be avoided.

In Siddha System of Medicine “Sirappu Maruthuvam” deals with cure and also prevention of diseases especially with special treatment techniques such as Yogam, Thokkanam, Varmam, in addition to internal medicine and external medicine. The author has explained here the methods of Thokkanam and and also some exercise for treating Ceganavaatham patients

Thokkanam:

Thokkanam is one of the oldest and simplest forms Siddha treatment. It improves muscle tone, stimulates blood circulation and helps elimination of waste products throughout the body. At its best thokkanam has the potential to restore the individual physically, mentally and spiritually.

தொக்கணம் - தொக்கு + அணம்
தொக்கு - தோல்
அணம் - அணைந்து செய்தல்

Thokkanam - A process consisting in striking with fist and then pressing the body or its part of a person suffering from some ailment. On account of this treatment the body grows strong, the skin gets luster and the person gets sound sleep.

தொக்கணத்தி னாலிரத்தந் தோல் ஊணிவைகட்கு
மிக்கு சவுக்கியஞ்ச மீரனும்போ - மெய்க்கதிக
புட்டியுறக்கம் புணர்ச்சி யிவைகதிக்கும்
பட்ட அலைச்சலறும் பார். (சமீரம் - வாயு)

- பொருட்பண்பு நூல்(சித்தர் அறுவை மருத்துவம், பக்கம் 30)

மர்த்தனமாகிய தொக்கணத்தின் செயல் வகுப்பேனே - சதா
நிந்தமும் வாதம் பிணித்த பிணிப்பைச் செகுப்பேனே
மல்லகரான பிடகர்கை யென்கிற வாளாலே - பிணி
வல்லியை மெய்யினிற் சேதிப்பராந் திறமை வாளாலே
தட்டலிறுக்கல் பிடித்தல் முறுகல்கை தைவந்து - கரங்
கட்டலழுத்த லிழுத்தல் மலாத்துதல் கைவந்து
அசைந்தலிவ் வொன்பது மத்தனத்திந்திரமானாலும் - இதில்
இசைத்த குனங்களைச் சொல்லப் போகு மோவடி யேனாலும்

- தேரன் தரு((சித்தர் அறுவை மருத்துவம், பக்கம் 30)

The nine techniques mentioned in the verse above are the thokkanam procedures described in our Siddha system. In our inpatient ward and outpatient department, the author treated the patients of Ceganavaatham with the following thokkanam methods.

1. Azhutthal
2. Piditthal

Exercise:

Simple movements of the head ,neck and upperlimbs were prescribed to patients of Ceganavaatham.

Expiation: (Kanmaneekkam)

Siddha literature says, poorvakanmam is one of the reasons for diseases among mankind. It should be expiated.

"நலியாலே வந்தகன்மந் தீரவென்றால்
நன்மரங்கள் தோப்பு நடைசாலை வைத்தல்
தெளிவான கிணறுவெட்டல் குளங்கள் வெட்டல்
தெய்வதலங் கோயில் கட்டத்தீரும் பாரு
எளிதான பாலகர்க்கா பரணமீதல்
என்பதென்ற வாதமெல்லா மிடைந்து போகும்
பழியானநோய் வந்தாவிப்படியே செய்து
பதிவாக வைத்தியத்தைப் பிறகு செய்யே".

- பாடல் 57, அகஸ்தியர் கன்ம காண்டம்- 300, பக்கம் 23

To expiate misdeeds of kanma, planting trees, establishing gardens, laying roads and pathways, digging wells, pools, lakes, construction of temples, donating ornaments to poor children must be done. These are advised to patients.

PROTOCOL

AN OPEN TRIAL OF *SARVAANGAVAATHA CHOORANAM* AND *VAATHA NOII THYLUM* FOR THE TREATMENT OF *CEGANAVAATHAM* (CERVICAL SPONDYLOSIS)

BY

Dr. M. PRATHIBA

1. BACK GROUND

Cervical spondylosis is defined as arthrosis of the posterior intervertebral joints in the cervical vertebrae. It is common in the middle aged and in the elderly particularly in those whose occupation involves a posture of prolonged neck flexion.

NEED FOR THIS STUDY

The Modern System of Medicine gives temporary relief for Cervical spondylosis. Commonly used methods are NSAIDS, traction, cervical collar. According to the literature of ***Aathmaratchamirtham*** and ***Kannusamy Vaithya Chinthamani,*** **Sarvaangavaatha *Chooranam*** and ***Vaatha Noii Thylum*** are the most efficient drugs for ***Ceganavaatham***

2. AIMS

a) **Primary aim:**

To find out the efficacy of **Sarvaangavaatha *chooranam*** and ***Vaatha Noii Thylum*** for ***Ceganavaatham***

b) Secondary aim: To evaluate the side effects of the trial drug, if any.

3. POPULATION AND SAMPLE

POPULATION

A) About the disease:-

In Siddha literature the clinical features of ***Ceganavaatham*** according to ***Yugi muni*** is given below,

"கேளுமே கழுத்தின் கீழரைக்கு மேலும்
கெடியான கரமிரண்டு மிகவே நொந்து
வாளுமே சரீரமெல்லாங் கனத்திருக்கும்
வாலிபர்க்கு மனங்கண்ணு மயக்கமாகும்
ஏளுமே இரண்டுகண்ணு மெரிச்சலுண்டாம்
ஏற்றமாய் மலந்தானு மிறுகிக்காணும்
தேளுமே கொட்டினது போற்கடுக்கும்
செகன வாதத்தினிட தீர்க்கந்தானே"

-யூகி வைத்திய சிந்தாமணி.

பொருள்:

கழுத்தின் கீழும், இடுப்புக்கு மேலும், கரங்கள் இரண்டும் நொந்து, உடல் எல்லாம் கனத்து காணப்படும். இரண்டு கண்களும் எரிச்சலுண்டாகும். மலம் இறுகிக் காணப்படும். தேள் கொட்டியது போல் கடுக்கும். இவை அனைத்தும் செகனவாதத்தின் குறிகுணங்களாகும்.

B) According to modern aspect, clinical features of cervical spondylosis:-

1. The patients complain of pain in the neck with or without radiating down to arm.
2. There will be diffuse tenderness in the cervical spine with limitation of all movements.
3. The neck is held rigidly and neck movements may exacerbate pain.
4. Paraesthesia and sensory loss may be found in the affected segment.
5. Headache in the occipital region at morning.
6. Burning and tingling sensation in the upper limbs.
7. Giddiness (or) drop attacks precipitated by neck movements.

SAMPLE

Ceganavaatham patients attending Ayothidoss Pandithar Hospital of National Institute of Siddha, Tambaram Sanatorium, Chennai - 47.

4. SAMPLE SIZE

It is proposed to study a sample of 60 patients.

a) INCLUSION CRITERIA

Definition of the disease:

Cervical spondylosis is defined as a disorder characterised by increasing degeneration of the intervertebral disc, with subsequent changes in the bones and soft tissues assessed by using clinical, physical and radiological methods (Reduction of the intervertebral disc space, cervical bone degeneration, osteophytic changes)

1. Ceganavaatham patient
2. Age between 25 years and 60 years
3. Willing to be admitted as In-patient in our ward for minimum 25 days and continue the remaining treatment in OPD or Willing to attend OPD once in 8 days for 48 days
4. Willing to undergo radiological investigation before and after treatment
5. Willing to give blood specimen before and after treatment

b) EXCLUSION CRITERIA

A patient is not eligible for admission to the trial if any of the following is applicable.

1. Any history of trauma, hypertension, cardiac disease
2. Use of intravenous (or) oral narcotic drugs
3. Pregnancy
4. Lactation
5. Patients with any other serious illnesses

c) WITHDRAWAL CRETERIA

1. Development of any adverse drug reaction (ADR)
2. Occurrence of any other serious illness

d) TRIAL DRUG & DURATION

1.	PURGATIVE	***Sitthathi ennai*** 15 ml with ***Sombu kudineer*** at early morning on first day only.
2.	INTERNAL DRUG	***Sarvaangavaatha Chooranam*** 1½ gm pack twice a day with hot water.
3.	EXTERNAL DRUG	***Vaatha Noii thylum*** 30-50 ml for local application twice a day.
4.	TRIAL PERIOD	48 days

5. TESTS AND ASSESSMENTS

TESTS

1. X- ray cervical spine
2. Routine investigations :

Blood - TC, DC, ESR, Hb, Blood sugar, Serum cholesterol

Urine - Albumin, Sugar, Deposits

Stools - Ova, Cysts, Occult blood

Siddha aspect - Naadi, Neer kuri, Neikkuri

CLINICAL ASSESSMENT

- ❖ Pain in the neck
- ❖ Radiating pain to upper limbs
- ❖ Tenderness
- ❖ Numbness
- ❖ Occational movementory Giddiness
- ❖ Headache
- ❖ Stiffness of the neck
- ❖ Restriction movement of the neck and upper limbs
- ❖ Neck examination
    - Rotation
    - Flexion
    - Extention
    - Lateral bending
    - Nodding

SIDDHA ASPECT (According to Yugi Vaithya Chinthamani)

- ❖ Pain below the neck, above the hip and in both upper limbs.
- ❖ Scorpion sting like pain in the above regions.
- ❖ Heaviness of the body,
- ❖ Burning sensation of the eyes,
- ❖ Constipation

6. CONDUCT

Cervical spondylosis patients satisfying inclusion and exclusion criteria will be eligible for admission to the trial. Informed consent will be obtained from the patients.

A day before starting trial treatment, balancing of mukkutras by purgation will be carried out. X-rays will be taken and tests will be carried out before and at the end of the treatment.

For IP patients, the trial drug will be given by the doctor. For OP patients, the trial drugs will be given for 8 days. They will be asked to come to OP with unconsumed medicines and return them. On the 8^{th} day, the trial drug will be given to the patient for another 8 days. At each clinical visit, clinical assessment will be made. Laboratory investigations will be carried out on the day before and on the 48^{th} day of the treatment.

7. FORMS

Required information would be collected from each patient using forms I, II.

- **Form I** – Selection proforma –Used before admission of the patients to the trial.
- **Form II** – Assessment proforma –Used once in 8 days during 48 days trial treatment period.

8. ANALYSIS

- Proportion of signs and symptoms before and after treatment – paired X^2test.
- Mean of objective parameters – before and after treatment – paired‘t’-test.

RESULTS AND OBSERVATIONS

Results of the study were observed with respect to the following criteria.

1. Sex distribution
2. Age distribution
3. Paruva kaalam(Seasonal changes)
4. Gunam (Quality & characters)
5. Thinai (5 types of land)
6. Duration of illness
7. Socio- economic status
8. Precipitating factors
9. Associated history
10. Occupational status
11. Clinical features
12. Derangement of Mukkutram
13. State of Udal kattugal
14. Derangement of Ganenthiriyam
15. Derangement of Kanmenthiriyam
16. Envagai Thervugal
17. Neikkuri
18. Radiological findings
19. Result of treatment with respect to signs and symptoms of 60 Ceganavaatham patients
20. Result of treatment with respect to pain in nape of 60 Ceganavaatham patients
21. Result of treatment

Table 1 – Distribution based on gender

The prevalence of Ceganavaatham among 60 cases, 20 (33.3%) are male, 40 (66.7%) are female.

Gender	No. of patients	Percentage
Male	20	33.3
Female	40	66.7
Total	60	100.0

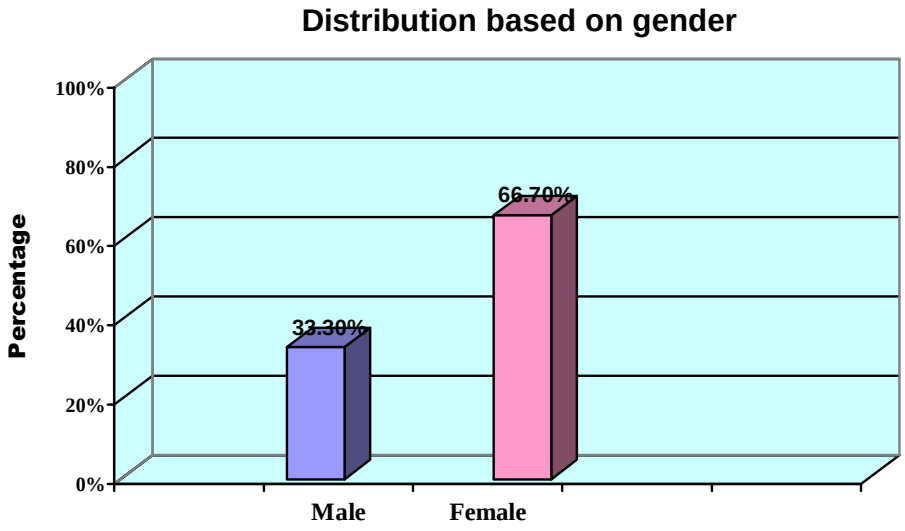


Table 2 – Age distribution

Among the 60 cases of Ceganavaatham the highest prevalence was in the age between 31-40 (38.3%), lowest incidence was in the age between 21-30 (1.7%).

Age (years)	No. of patients	Percentage
21-30	1	1.7
31-40	23	38.3
41-50	21	35.0
51-60	15	25.0
Total	60	100.0

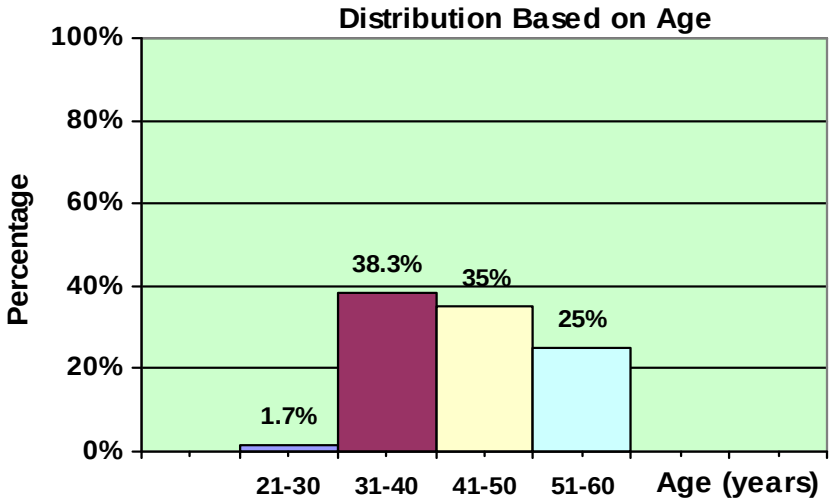


Table 3 – Paruvakaalam (Seasonal Prevalence)

Among the 60 cases majority of them belonged to Koothirkaalam (65%).

Paruvakaalam	Months	No. of patients	Percentage
1. Kaarkaalam	17th Aug-17th Oct	0	0.0
2. Koothirkaalam	18th Oct-15th Dec	39	65.0
3. Munpanikaalam	16th Dec-12th Feb	14	23.3
4. Pinpanikaalam	13th Feb-13th Apr	0	0.0
5. Ilavenirkaalam	14th Apr-16th June	0	0.0
6. Mudhuvenirkaalam	17th Jun-16th Aug	7	11.7
Total		60	100.0

Table 4- According to Gunam (Quality of the individual)

Among the three gunas (Qualities of the individual), namely Sathuvam, Raasatham and Thaamatham**,** all the 60 patients were found to possess Rajo gunam predominantly.

Gunam	No. of patients	Percentage
1. Sathuvagunam	0	0.0
2. Rajogunam	60	100.0
3. Thamogunam	0	0.0
Total	60	100.0

Table 5 - Thinai (Distribution according to living lands)

All the 60 patients belonged to Neithal (100%)

Thinai	No. of patients	Percentage
1. Kurinchi(Hill area)	0	0.0
2. Mullai(Forest area)	0	0.0
3. Marutham(Fertile area)	0	0.0
4. Neithal (Coastal area)	60	100.0
5. Paalai (Desert area)	0	0.0
Total	60	100.0

Table 6 - Distribution according to duration of illness

Among the 60 patients majority of them were above 30 months (36.7%) in their duration of illness.

Duration Of Illness (Months)	No of patients	Percentage
Upto 6	17	28.3
7- 12	7	11.7
13- 18	6	10.0
19- 24	7	11.7
25- 30	1	1.6
Above 30	22	36.7
Total	60	100.0

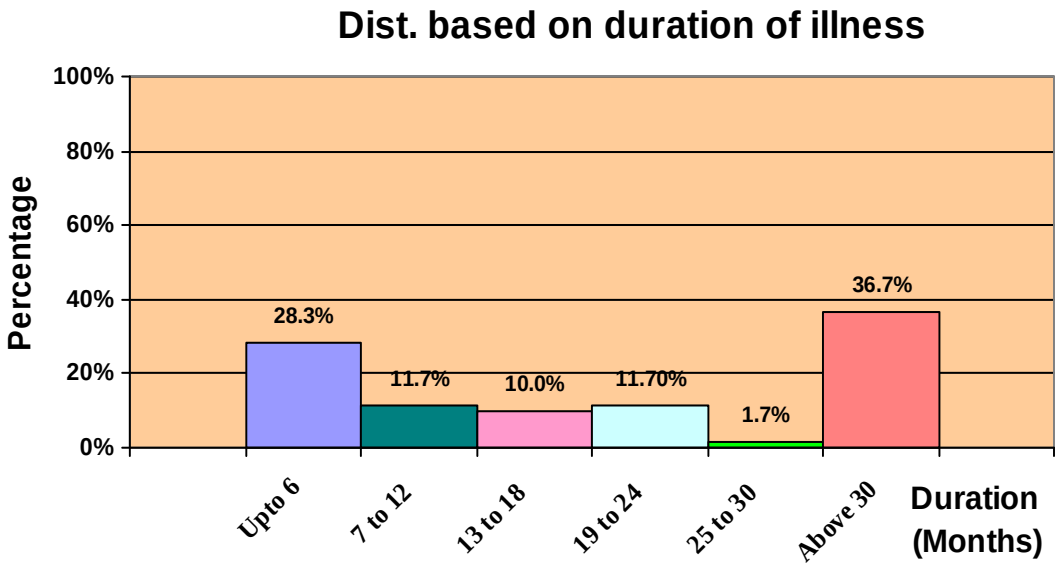


Table 7 - Distribution according to Socio - economic status

Among the 60 patients majority (63.3 %) of them belonged to the middle class and the rest (36.7%) to the low socio – economic status.

Socio economic status	No. of patients	Percentage
1.Low	22	36.7
2.Middle	38	63.3
3.High	0	0.0
Total	60	100.0

Table 8 - Distribution according to precipitating factors

Among the 60 patients majority of them ie 31 patients (51.7%) had occupational history and the rest of them i.e. 29 patients (48.3%) had history of increased household works.

Precipitating factors	No. of patients	Percentage
1.Increased household works	29	48.3
2.Occupation related	31	51.7
3. Traumatic history	0	0.0
Total	60	100.0

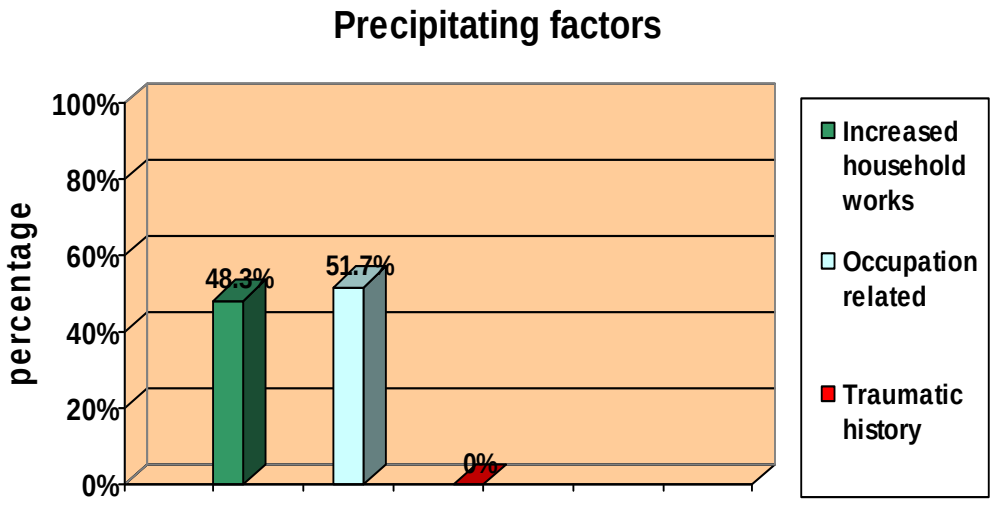


Table 9- Distribution according to associated history

Among the 60 patients, 6 patients (10%) were diabetic, 3 patients (5%) had the history of hysterectomy. 2 patients (3.3%) had the history of sinusitis and 1 patient (1.7%) had the history of bronchial asthma.

Associated conditions	No. of patients	Percentage
1. Diabetes mellitus	6	10.0
2. Hypertension	0	0.0
3. Bronchial asthma	1	1.7
4. Sinusitis	2	3.3
5. Hysterectomy	3	5.0

Table 10 - Prevalence based on occupations

To find out and give clear data about the occupational hazards in Ceganavaatham patients, the nature of all the thirty one were thoroughly investigated and has been given in table belo:. Among them 12 patients (20%) were clerical workers, 5 patients (8.3%) were packers, 3 patients (5%) were teachers, 3 patients (5%) were painters, 2 patients (3.3%) were tailors, 2 patients (3.3%) were servants, 1 patient (1.7%) was a cycle service man, 1 patient (1.7%) was a carpenter, 1 patient (1.7%) was a race-horse maintainer and 1 patient (1.7%) was a weight lifter.

Occupation	No. of patients	Percentage
1. Clerical worker	12	20.0
2. Packing worker	5	8.3
3. Teacher	3	5.0
4. Painter	3	5.0
5. Tailor	2	3.3
6. Servant	2	3.3
7. Cycle company worker	1	1.7
8. Carpenter	1	1.7
9. Race horse maintainer	1	1.7
10. Weight lifter	1	1.7

Table 11- Clinical features distribution

The signs and symptoms noted in Ceganavaatham patients have been given in the table. Pain in the nape and mental depression were almost present in all the 60 cases. Among them 56 patients (93.3%) had pain in the upper limb(s), 47 patients (78.3%) had weakness in upper limb(s), 43 patients (71.7%) had stiffness in the neck, 37 patients (61.7%) had headache, 34 patients (56.7%) had numbness in the upper limb, 28 patients (46.7%) had giddness, 26 patients (43.3%) had restriction of movements in neck, 25 patients (41.7%) had tenderness in upper limb(s), 24 patients (40%) had burning sensation of eyes. 16 patients (26.7%) had feeling of heaviness of the body and 12 patients (20%) had constipation.

Clinical features	No. of patients	Percentage
1. Pain in nape	60	100.0
2. Mental depression	60	100.0
3. Pain in upper Limbs	56	93.3
4. Weakness of upper limbs	47	78.3
5. Stiffness	43	71.7
6. Headache	37	61.7
7. Numbness	34	56.7
8. Giddiness	28	46.7
Restricted movements		
9. Neck	26	43.3
10. Upper limbs	0	0.0
11. Tenderness	25	41.7
12. Burning sensation of the eyes	24	40.0
13. Feeling of heaviness of body	16	26.7
14. Constipation	12	20.0

Analysis based on Mukkutram

Table 12- Derangement of Vaatham

In all the 60 cases (100%) Viyaanan, Samaanan and Naagan were affected. Koorman was deranged in 23 cases (38.3%). Abaanan was deranged in 12 cases (20%).

Vaatham	No. of patients	Percentage
1. Praanan	0	0.0
2. Abaanan	12	20.0
3. Viyaanan	60	100.0
4. Udhaanan	0	0.0
5. Samaanan	60	100.0
6. Naagan	60	100.0
7. Koorman	23	38.3
8. Kirugaran	0	0.0
9. Thevaathathan	0	0.0
10. Thananjeyan	0	0.0

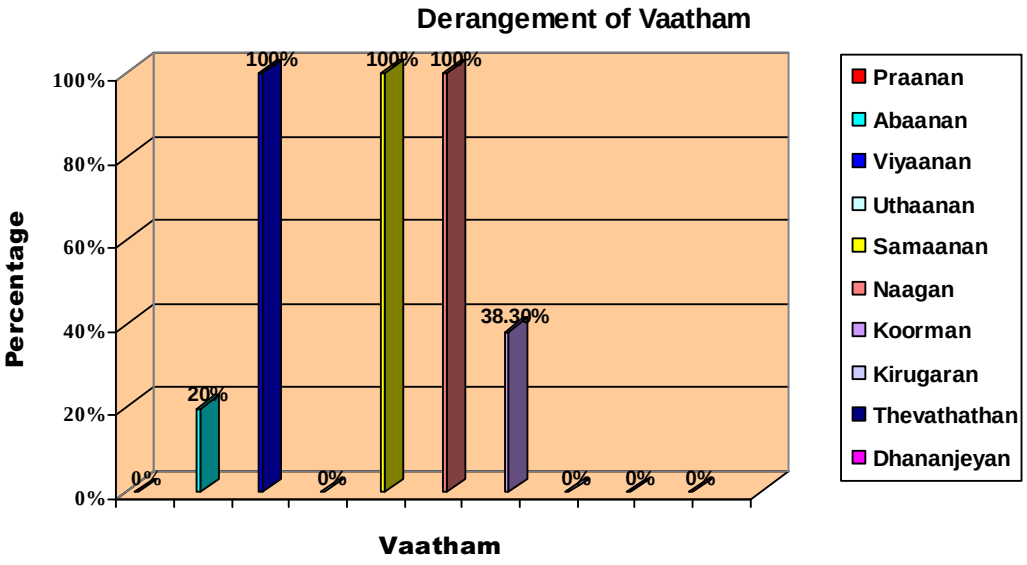


Table 13 - Derangement of Pittham

Among the 60 cases, Saathagam was deranged in all cases (100%). Ranjagam was deranged in 15 cases (25%).

Pittham	No. of patients	Percentage
1. Anar Pittham	0	0.0
2. Ranjaga Pittham	15	25.0
3. Saathaga Pittham	60	100.0
4. Aalosaga Pittham	0	0.0
5. Praasaga Pittham	0	0.0

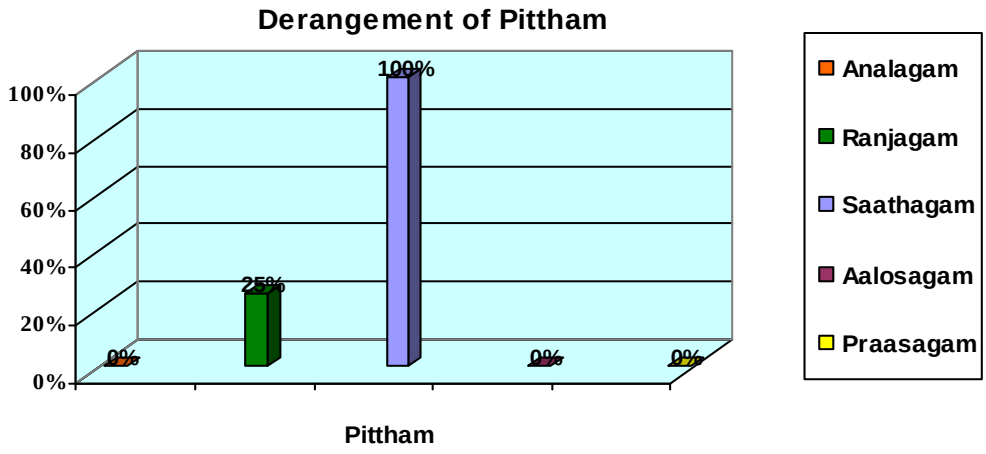


Table 14 - Derangement of Kabam

In all the 60 cases (100%) Avalambagam and Santhigam were deranged. Tharpagam was deranged in 24 cases (40%).

Kabam	No. of patients	Percentage
1. Avalambagam	60	100.0
2. Kilethagam	0	0.0
3. Bothagam	0	0.0
4. Dharpagam	24	40.0
5. Santhigam	60	100.0

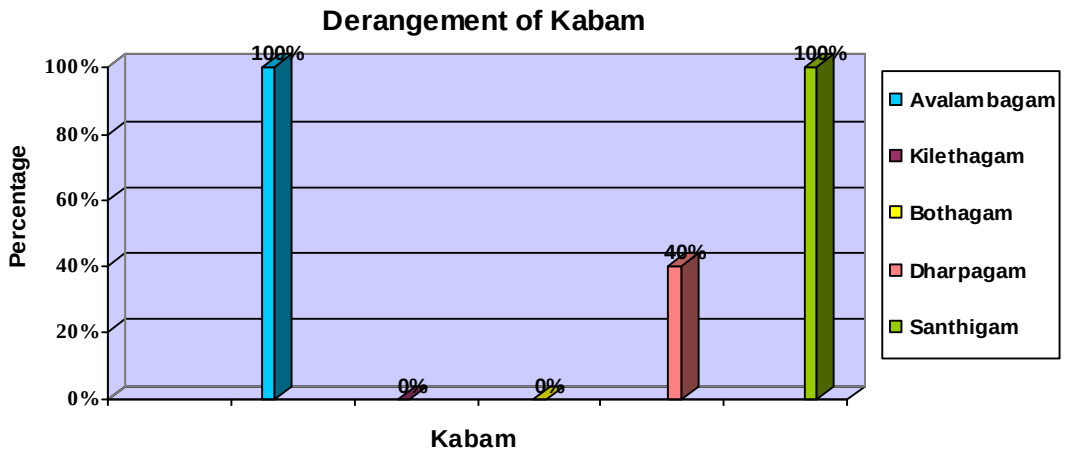


Table 15 - Derangement of Udal Thaathukkal

In all the 60 cases (100%) Saaram and Enbu were affected. Oon was affected in 43 cases (71.7%). Kozhuppu was affected in 36 cases (60%). Senneer was affected in 15 cases (25%). Sukkilam / Suronitham were affected in 3 cases (5%).

Udal Thaathukkal	No. of patients	Percentage
1. Saaram	60	100.0
2. Senneer	15	25.0
3. Oon	43	71.7
4. Kozhuppu	36	60.0
5. Enbu	60	100.0
6. Moolai	0	0.0
7. Sukkilam/Suronitham	3	5.0

Table 16 - Derangement of Envagai Thervugal

Among the 60 patients Vizhi was affected in 32 cases (53.3%), Sparism was affected in 25 cases (41.7%). Naa was affected in 15 cases (25%). Niram was affected in 1 case (1.7%).

Envagai Thervugal	No. of patients	Percentage
1. Naadi	0	0.0
2. Sparism	25	41.7
3. Naa	15	25.0
4. Niram	1	1.7
5. Mozhi	0	0.0
6. Vizhi	32	53.3
7. Malam	0	0.0
8. Moothiram	0	0.0

Table 17 – Naadi (Pulse reading)

Among the 60 cases, PitthaVaatham was present in 30 cases (50%), VaathaPittham was present in 28 cases (46.7%) and PitthaKabam was present in cases (3.3%).

Naadi	No. of patients	Percentage
1. VaathaPittham	28	46.7
2. PitthaVaatham	30	50.0
3. PitthaKabam	2	3.3
Total	60	100.0

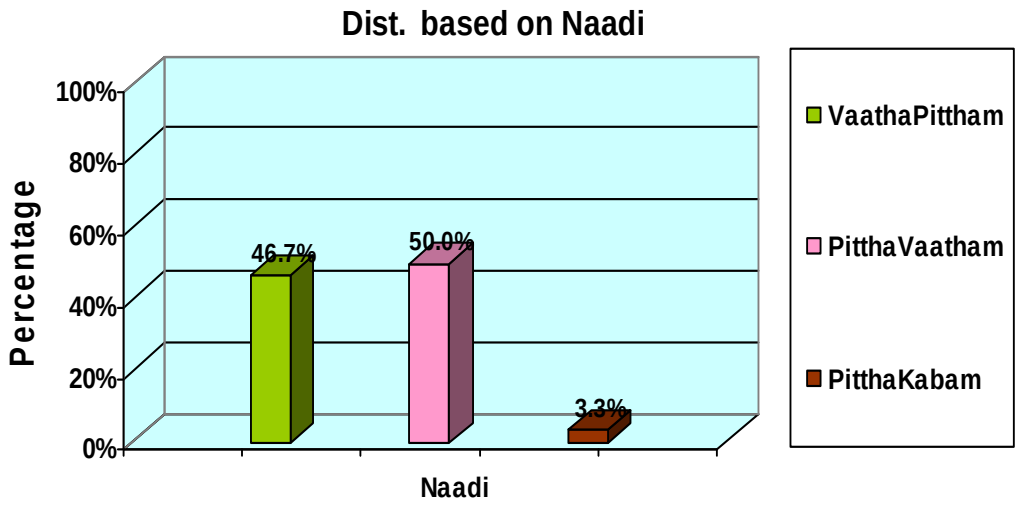


Table 18 - Neikkuri Analysis

A drop of oil poured on collected urine of patients slowly spread in 46 cases (76.7%) and in the rest of the 14 cases (23.3%) oil drop spread like a pearl (Kaba neer).

Inference	No. of patients	Percentage
1. Slowly spread	46	76.7
2. Kaba neer	14	23.3
Total	60	100.0

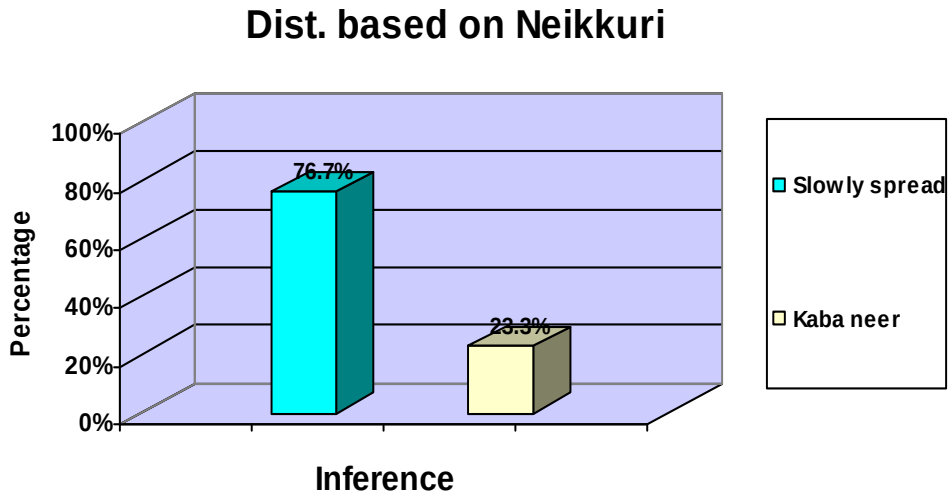


Table 19 – X ray findings

Among the 60 patients the X- ray findings reveal degenerative changes and Osteophytes in all the 60 patients (100%). Loss of Cervical Lordosis was found in 20 cases (33.3%), intervertebral space narrowing in 15 cases (25%).

Before treatment, loss of Cervical Lordosis was found in 20 cases and after treatment Cervical Lordosis was maintained normal in 2 patients.

X ray findings	No. of patients	Percentage
1. Degenerative changes	60	100.0
2. Osteophytic changes	60	100.0
3. Loss of cervical lordosis	20	33.3
4. Intervertebral space narrowing	15	25.0
5. Ligaments	0	0.0
6. Pre & Para vertebral space	0	0.0
7. Alignments	0	0.0

Table 20 – Result of treatment with respect to pain in nape of 60 Ceganavaatham patients

Among the 60 cases, 26 (43%) cases were admitted with severe pain and 5 (19%) of them got relief and the remaining 21(81%) of them got their pain considerly reduced. In 34 (57%) cases admitted with moderate pain, 26(76%) of them got relief and 8(24%) of them got their pain considerly reduced after treatment. Among the 60 cases totally admitted, 31(52%) got relief and 29(48%) got their pain considerly reduced after treatment.

		After Treatment				
	Pain	Relieved	Diminished	Persistent	Aggravated	Total
Before Treatment	Severe	5(19%)	21(81%)	0	0	26 (43%)
	Moderate	26(76%)	8(24%)	0	0	34 (57%)
	Mild	0	0	0	0	0
	Nil	0	0	0	0	0
	Total	31(52%)	29(48%)	0	0	60(100%)

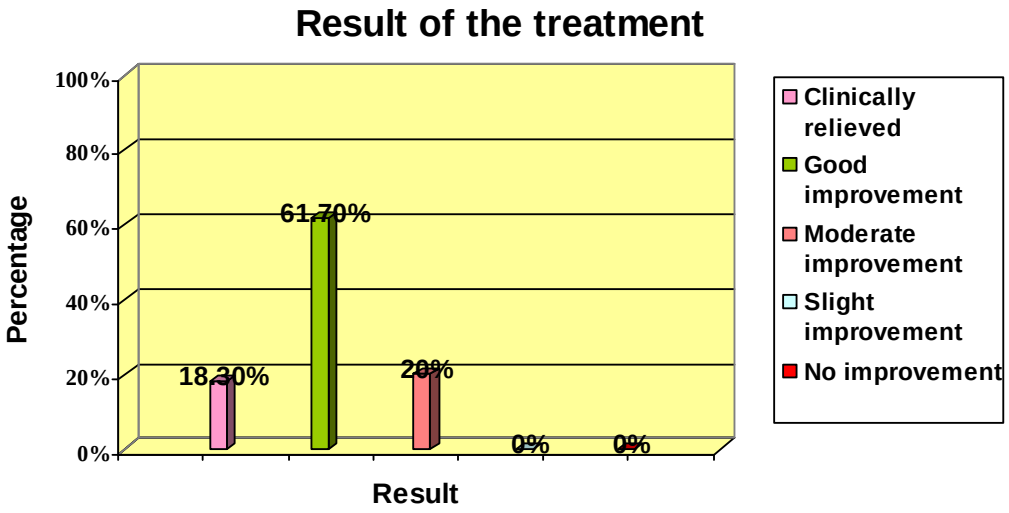
Table 21 – Result of treatment with respect to signs & symptoms of 60 Ceganavaatham patients

Signs and symptoms	Before treatment		After treatment	
	Absent	Present	Relieved	Diminished
1. Pain in nape	0	60	31(52%)	29(48%)
2. Stiffness	18	42	36(86%)	6(14%)
3. Restricted movements of Neck	33	27	25(93%)	2(7%)
4. Pain in upper Limbs	3	57	40(70%)	17(30%)
5. Numbness in upper limbs	26	34	26(76%)	8(24%)
6. Tenderness	33	27	24(89%)	3(11%)
7. Giddiness	32	28	28(100%)	0(0%)
8. Headache	25	35	27(77%)	8(23%)
9. Constipation	48	12	10(83%)	2(17%)

Table 22 – Result of treatment

Among the 60 patients, 11 patients (18.3%) got relieved, 37 patients (61.7%) got good improvement and 12 patients got moderate improvement in their symptoms and signs.

Result of treatment	No. of patients	Percentage
1. Clinically relieved	11	18.3
2. Good improvement	37	61.7
3. Moderate improvement	12	20.0
4. Slight improvement	0	0.0
5. No improvement	0	0.0
Total	60	100.0



X – RAY FINDINGS

Si No.	IP No.	Name	Age	Sex	Cervical lordosis		Alignment		IVD space narrowing		Degenerative changes		Osteophytes		Ligaments		Pre Vertebral space	
					BT	*AT*	*BT*	*AT*	*BT*	*AT*	*BT*	*AT*	*BT*	*AT*	*BT*	*AT*	*BT*	*AT*
1.	O95	Ragilabegam	45	F	N	-	N	-	N	-	C4-6	-	C4-6	-	N	-	N	-
2.	111	Gomathi	42	F	N	-	N	-	N	-	C4-7	-	C4-7	-	N	-	N	-
3.	110	Tamilarasi	50	F	N	N	N	N	C3-4, C4-5	C3-4,C4-5	C4-6	C4-6	C4-6	C4-6	N	N	N	N
4.	117	Umavathy	35	F	N	-	N	-	C2-3, C3-4, C4-5, C5-6	-	All	-	All	-	N	-	N	-
5.	119	R. Mohana	35	F	Lost	Lost	N	N	C5-6	C5-6	C4-7	C4-7	C4-7	C4-7	N	N	N	N
6.	123	Vedhavalli	48	F	N	N	N	N	C4-5, C5-6	C4-5,C5-6	C2-7	C2-7	C2-7	C2-7	N	N	N	N
7.	129	B.Tharabai	39	F	Lost	Lost	N	N	N	N	C2-7	C2-7	C2-7	C2-7	N	N	N	N
8.	189	Rajalakshmi	36	F	Lost	Lost	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
9.	197	Kamalam	47	F	N	N	N	N	N	N	C4-7	C4-7	C4-7	C4-7	N	N	N	N
10.	200	Sivagami	55	F	Lost	Lost	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
11.	202	Malarvizhi	35	F	Lost	Lost	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
12.	203	Mathuram	60	F	Lost	Lost	N	N	C3-4, C4-5, C5-6	C3-4, C4-5,C5-6	C3-7	C3-7	C3-7	C3-7	N	N	N	N
13.	480	Arumugam	50	M	Lost	Lost	N	N	N	N	C2-7	C3-6	C2-7	C3-6	N	N	N	N
14.	485	Tamilarasan	43	M	N	-	N	-	N	-	C3-6	-	C3-6	-	N	-	N	-
15.	486	Vijayakumar	28	M	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
16.	217	Pappathy	60	F	N	N	N	N	N	N	Below C4	Below C4	Below C4	Below C4	N	N	N	N
17.	219	A. Valli	39	F	N	N	N	N	N	N	C3-7	C3-7	C3-7	C3-7	N	N	N	N
18.	495	Elumalai	60	M	N	N	N	N	C5-6, C6-7	C5-6,C6-7	C3-7	C3-7	C3-7	C3-7	N	N	N	N
19.	494	Bakthavatchalam	51	M	N	N	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
20.	501	Gopinath	37	M	Lost	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
21.	504	Krishnamoorthy	60	M	N	N	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
22.	249	Premavathy	42	F	Lost	Lost	N	N	N	N	All	All	All	All	N	N	N	N

X – RAY FINDINGS

Si No.	OP. No.	Name	Age	Sex	Cervical lordosis		Alignment		IVD space narrowing		Degenerative changes		Osteophytes		Ligaments		Pre Vertebral space	
					BT	*AT*	*BT*	*AT*	*BT*	*AT*	*BT*	*AT*	*BT*	*AT*	*BT*	*AT*	*BT*	*AT*
23.	S1522	K.Valli	39	F	N	N	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
24.	S1940	S. Murugan	48	M	Lost	Lost	N	N	C5-6	C5-6	C4-7	C4-7	C4-7	C4-7	N	N	N	N
25.	S2500	Chakkaraphani	60	M	N	N	N	N	C5-6	S	C4-6	C4-6	C4-6	C4-6	N	N	N	N
26.	S2612	Pushpakumari	43	F	N	N	N	N	C5-6	C5-6	C3-6	C3-6	C3-6	C3-6	N	N	N	N
27.	S3767	Bhuvaneshwari	38	F	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
28.	S5177	Vijayalakshmi	52	F	Lost	Lost	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
29.	S5981	Revathy	38	F	Lost	Lost	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
30.	S7161	R.Vasantha	59	F	Lost	Lost	N	N	N	N	C5-6	C5-6	C5-6	C5-6	N	N	N	N
31.	S7302	S.Valarmathy	40	F	Lost	Lost	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
32.	S7801	Kasilingam	40	M	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
33.	S9290	Pradeepkumar	33	M	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
34.	T296	Dawood	60	M	Lost	Lost	N	N	C4-5, C5-6	C4-5, C5-6	C3-7	C3-7	C3-7	C3-7	N	N	N	N
35.	T2479	Malliga	35	F	N	-	N	-	N	-	C3-6	-	C3-6	-	N	-	N	-
36.	T3182	Seethalakshmi	40	F	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
37.	T3399	C.Mangalam	46	F	N	N	N	N	C5-6	C5-6	C4-6	C4-6	C4-6	C4-6	N	N	N	N
38.	T3592	Tamilselvi	44	F	Lost	Lost	N	N	C6-7	C6-7	C3-6	C3-6	C3-6	C3-6	N	N	N	N
39.	T5599	Knight	43	M	N	-	N	-	N	-	C3-6	-	C3-6	-	N	-	N	-
40.	T6085	Rajenthiran	58	M	N	N	N	N	C5-6	C5-6	C4-6	C4-6	C4-6	C4-6	N	N	N	N
41.	T6511	Neelavathi	50	F	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N

X – RAY FINDINGS

42.	T8288	D.Amutha	32	F	N	-	N	-	N	-	C4-6	-	C4-6	-	N	-	N	-
43.	T8327	N.Shanthi	36	F	Lost	Lost	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
44.	T8557	R.Revathy	32	F	N	N	N	N	N	N	C3-7	C3-7	C3-7	C3-7	N	N	N	N
45.	T8642	S.Kamaraj	52	M	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
46.	T8657	S.Kamala	48	F	N	N	N	N	N	N	C2-7	C2-7	C2-7	C2-7	N	N	N	N
47.	T8984	Gandhi	35	M	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
48.	T9500	K.Devagi	54	F	N	N	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
49	U158	C.Kannan	60	M	N	N	N	N	C3-4, C4-5,	C3-4, C4-5,	C3-6	C3-6	C3-6	C3-6	N	N	N	N
50.	U557	Kanniga parameshwari	36	F	Lost	N	N	N	N	N	C2-6	C2-6	C2-6	C2-6	N	N	N	N
51.	U1103	Pitchaiammal	43	F	N	-	N	-	N	-	C4-6	-	C4-6	-	N	-	N	-
52.	U1199	Saraswathi	50	F	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
53.	U1882	Kanniga	51	F	N	N	N	N	C6-7	C6-7	C3-7	C3-7	C3-7	C3-7	N	N	N	N
54.	U2501	U. Kannagi	44	F	Lost	Lost	N	N	N	N	C4-7	C4-7	C4-7	C4-7	N	N	N	N
55.	U3431	Lalitha	44	F	N	N	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
56.	U4124	D.Vasanthi	42	F	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
57.	U4466	K.Neelofar	34	F	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
58.	U5853	K.Balakrishnan	47	M	N	N	N	N	N	N	C3-6	C3-6	C3-6	C3-6	N	N	N	N
59.	U5855	S.Parthasarathi	40	M	N	N	N	N	N	N	C4-6	C4-6	C4-6	C4-6	N	N	N	N
60.	U5862	R.Pattabiraman	37	M	Lost	-	N	-	N	-	C4-6	-	C4-6	-	N	-	N	-

*N - Normal

HAEMATOLOGICAL INVESTIGATIONS

Si No.	IP No.	TC (Cumm)		DC (Cumm)								Hb (mg/dl)		Blood sugar (mgs%)				Blood urea (mgs%)		Blood cholesterol (mgs%)		ESR (mm)			
		BT	AT	BT(%)				AT(%)				BT	AT	BT		AT		BT	AT	BT	AT	BT		AT	
				P	L	E	M	P	L	E	M			F	PP	F	PP					½hr	1hr	½hr	1hr
1.	O95	7200	7100	58	40	02	-	60	38	02	-	11	11.2	96.2	122. 2	85.1	156	31	34	182	163	16	32	06	14
2.	111	7500	7300	54	40	06	-	56	40	06	-	12	12.2	100	126	78	137	34	33	260	156.2	15	30	06	12
3.	110	8100	8100	54	44	02	-	50	48	02	-	10.6	11.8	93	107.4	96	120	38	36	159	175	15	30	09	20
4.	117	7300	7300	54	40	06	-	58	38	04	-	12.4	12.6	89	104	86	100	32	36	241.3	175	12	24	09	18
5.	119	8000	8100	60	36	04	-	54	44	02	-	12.4	12.6	74	141	89	144	36	34	208	190	13	26	07	18
6.	123	6800	6800	56	42	02	-	58	40	02	-	12	12.2	89	115	96.2	120	32	35	248.2	200	09	18	08	16
7.	129	8200	8000	54	40	06	-	56	40	04	-	12	11.2	67	130	78	122	31	30	228	208	24	48	11	22
8.	189	8800	8700	64	34	02	-	60	38	02	-	10.2	12.4	107.4	126	83	120	46.4	38	159	150	06	14	06	12
9.	197	8600	8500	60	40	-	-	60	38	02	-	11.8	12.8	211.1	222. 2	200	228	30.2	32	205	200	20	42	16	34
10.	200	7200	7500	54	44	02	-	56	42	02	-	10	10.8	101.4	119	86	120	30.2	32	213	205	08	16	06	12
11.	202	8000	7200	56	44	-	-	56	40	04	-	10	11	78	81.4	96	118	26	28	180	174	07	14	11	22
12.	203	7000	7100	58	40	02	-	56	43	01	-	10	12	100	130	93	139	26	30	196	182	12	20	12	24
13.	480	9200	8600	54	42	04	-	58	42	-	-	12.2	12.4	84	92	73	107	37	33	206	190	03	06	02	04
14.	485	8000	8000	56	40	04	-	58	42	-	-	12.4	12.4	78	96.2	80	100	38	34	181.2	180	09	18	09	18
15.	486	7400	8000	56	42	02	-	56	40	04	-	12.6	13.4	76	120	88	140	42	40	186	180	02	04	03	06
16.	217	9800	8600	56	42	02	-	58	41	01	-	10.6	12	71	118	104	123	32	30	165	162	40	80	14	30
17.	219	8400	7900	48	46	06	-	58	38	04	-	10.4	12	82.1	107	86	100	11	28	179	180	07	15	05	10
18.	495	9000	8800	52	46	02	-	56	43	01	-	14.2	12.6	67	130	89	112	16	24	152	187	04	10	06	12
19.	494	8900	8000	58	38	04	-	56	40	04	-	11.8	12.6	82.1	118	71	114	31	25	145	179	04	08	04	08
20.	501	8900	8000	56	42	02	-	58	40	02	-	11.8	12	74	99	89	136	30	24	200	187	04	08	08	16
21.	504	9900	9000	56	42	02	-	50	46	02	02	12.6	12.9	96	115	93	130	29	21	207	188	08	16	05	10
22.	249	7500	8000	60	38	02	-	52	46	02	-	12	10	100	132	108	138	30	24	180	178	20	40	06	12

* BT – Before treatment, AT – After treatment

HAEMATOLOGICAL INVESTIGATIONS

Si No.	OP No.	TC (Cumm)		DC (Cumm)								Hb (mg/dl)		Blood sugar (mgs%)				Blood urea (mgs%)		Blood cholesterol (mgs%)		ESR (mm)			
		BT	AT	BT(%)				AT(%)				BT	AT	BT		AT		BT	AT	BT	AT	BT		AT	
				P	L	E	M	P	L	E	M			F	PP	F	PP					½hr	1hr	½hr	1hr
23.	S1522	6500	6800	66	34	-	-	60	36	04	-	10.8	12	111. 2	121.3	89	111	21	20	180	174	09	18	06	12
24.	S1940	8000	7500	60	38	02	-	60	36	04	-	13.4	13.4	181.4	185.1	118	236	39	34	277.4	230	02	04	03	06
25.	S2500	9000	8100	60	36	04	-	60	40	-	-	11.6	12.6	111	230	104	144	37	33	214	210	10	22	04	10
26.	S2612	9600	9000	52	42	06	-	56	40	04	-	12.4	12	81.1	96.2	80	112	26	22	152	150.2	10	22	13	26
27.	S3767	7800	8100	56	40	04	-	58	40	02	-	12	13.2	80.2	120	79	100	24.4	20	193.1	190	08	16	07	14
28.	S5177	7400	7500	58	40	02	-	60	36	04	-	12.4	11.8	80	96	61	114	23.3	21	166	155	12	26	06	14
29.	S5981	7300	8000	50	48	02	-	50	48	02	-	12	12	96.2	111.1	99	120	36	33	144.3	145.3	10	20	06	12
30.	S7161	7400	8000	48	48	04	-	56	42	02	-	12.6	12.8	93	104	93	127	41	24	222	224	10	20	06	12
31.	S7302	8300	8200	60	36	04	-	60	38	02	-	12.4	12.2	89	104	80	123	37	24	183	182	20	40	20	40
32.	S7801	9000	8200	60	40	-	-	54	44	02	-	12.4	14	167	211	169	221	42	18	227	215	03	06	02	04
33.	S9290	9000	8800	58	40	02	-	58	38	04	-	11	11.6	89	104	89	112	24	24	198	189	02	04	02	04
34.	T296	9000	8200	58	36	06	-	58	38	04	-	12.8	12.4	74	130	79	143	26	23	141	140	20	40	10	20
35.	T2479	7200	7100	50	44	06	-	58	40	02	-	12	12.1	74	89	93	120	31	30.1	147	140	10	20	08	16
36.	T3182	8300	7800	60	36	04	-	56	40	02	-	12	12	80	96	75	96	29	23	200	187	06	12	04	08
37.	T3399	6900	6700	50	48	02	-	52	46	02	-	12	12.2	82	126	71	96	29	18	173	200	04	08	05	10
38.	T3592	8200	7600	60	40	-	-	56	44	-	-	11.8	12	68	86	82	121	15	20	193	166	08	16	09	18
39.	T5599	8200	8100	58	40	02	-	60	40	-	-	12.6	12.6	96	122	88	120	38	34	198	196	04	08	03	06
40.	T6085	6500	6800	60	38	02	-	54	44	02	-	9	10.8	100. 2	117. 2	111	132	21.2	19	138	159	12	26	08	16
41.	T6511	9000	8600	58	38	04	-	54	44	02	-	13	14	179	297	160	234	18	16	206	207	20	40	08	16
42.	T8288	8200	8200	58	41	01	-	60	40	-	-	11	11.4	82	129	94	130	17	16	173	170	06	12	04	08
43.	T8327	9000	8000	54	42	04	-	58	40	02	-	12.2	12.4	121	232	133	207.2	20	22	278	276	10	20	20	40
44.	T8557	8700	7900	56	38	06	-	48	48	04	-	13.4	14	80	123	118	167	24	23	179	173	10	20	06	12
45.	T8642	8600	8000	56	42	02	-	60	38	02	-	13.6	12.8	78	126	118	138	24	22	220	220	02	04	04	08
46.	T8657	9000	8400	60	38	02	-	50	48	02	-	12	12	104	124	115	122	25	22	233	207	04	08	06	12

* BT – Before treatment, AT – After treatment

HAEMATOLOGICAL INVESTIGATIONS

47.	T8984	6800	6800	58	40	02	-	53	45	02	-	14	13.6	90	112	81	107	19	23	187	152	16	34	12	24
48.	T9500	7100	7300	56	42	02	-	60	38	02	-	12	12.4	229	392	192	329	20.2	22	180	208	26	54	08	18
49.	U158	8400	8300	50	48	02	-	53	45	02	-	12.8	12.8	100	155	89	109	21	24	173	201	20	40	09	18
50.	U557	7000	7000	54	42	04	-	53	45	02	-	12	12.8	79	104	89	118	22	22	127	127	20	40	16	34
51.	U1103	7300	6600	50	48	02	-	53	45	02	-	11.2	12.6	86	110	93	109	16	20	207	197	06	12	06	12
52.	U1199	8000	7600	60	36	04	-	55	40	03	02	12	13	79	100	82	106	25	22	180	173	10	20	07	14
53.	U1882	7000	7100	50	46	04	-	58	40	02	-	12.2	11.2	83	152	100	146	28	21	228	193	08	16	11	22
54.	U2501	7300	7000	60	38	02	-	56	42	02	-	10	9.8	88	108	82	96	24	18	180	160	22	44	12	24
55.	U3431	6800	6600	46	50	02	02	52	44	04	-	12	12	76	131	79	129	21	18	160	147	08	18	06	12
56.	U4124	8000	8600	60	38	02	-	53	45	02	-	11	10.8	75	114	96	115	20	18	150	133	06	12	06	12
57.	U4466	8900	8700	60	36	04	-	55	40	05	-	12	11.8	86	109	104	136	18	19	207	221	22	46	06	12
58.	U5853	8600	8800	60	38	02	-	48	50	02	-	12.8	13.2	91	123	100	140	24	20	157	148	06	12	05	10
59.	U5855	9000	7850	56	40	04	-	50	46	04	-	13.4	12.6	73	105	85	155	26	24	207	213	10	22	05	10
60.	U5862	7000	8000	62	36	02	-	56	42	02	-	12.4	11.6	91	113	78	107	17	25	186	142	08	18	04	08

* BT – Before treatment, AT – After treatment

URINE AND MOTION ANALYSIS

Si.No	IP No.	Before treatment			After treatment			Before treatment			After treatment		
		Albumin	Sugar	Deposits	Albumin	Sugar	Deposits	Ova	Cyst	Occult blood	Ova	Cyst	Occult blood
1.	O95	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	1-2 PC,2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
2.	111	Nil	Nil	4 -6 PC,4 -6 EC	Nil	Nil	1-2 PC,2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
3.	110	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
4.	117	Nil	Nil	2-3 PC,1-2 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
5.	119	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
6.	123	Nil	Nil	4-6 PC,3-6 EC	Nil	Nil	2-4 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
7.	129	Nil	Nil	Plenty PC,Plenty EC	Nil	Nil	2-4 PC,2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
8.	189	Nil	Nil	4-6 PC,2-4 EC	Nil	Nil	2-4 PC,2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
9.	197	Nil	+ + +	2-4 PC,1-2 EC	Nil	+ + +	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
10.	200	Nil	Nil	4-6 PC,4-6 EC	Nil	Nil	2-4PC,2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
11.	202	Nil	Nil	4-6 PC,2-4 EC	Nil	Nil	2-4 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
12.	203	Nil	Nil	4-6 PC,2-4 EC	Nil	Nil	2-4 PC,2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
13.	480	Nil	Nil	4-6 PC,4-6 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
14.	485	Nil	Nil	4-6 PC,2-4 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
15.	486	Nil	Nil	4-6 PC,4-6 EC	Nil	Nil	1-2 PC,3-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
16.	217	Nil	Nil	2-4 PC,2-4 EC	Nil	Nil	1-2 PC,2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
17.	219	Nil	Nil	4-6 PC,6-8 EC	Nil	Nil	4-6 PC,4-6 EC	Nil	Nil	Nil	Nil	Nil	Nil
18.	495	Nil	Nil	8-10 PC,2-4 EC	Nil	Nil	3-4 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
19.	494	Nil	Nil	4-6 PC,4-6 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
20.	501	Nil	Nil	4-6 PC,4-6 EC	Nil	Nil	4-6 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
21.	504	Nil	Nil	2-4 PC,2-4 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
22.	249	Nil	Nil	5-6 PC,4-6 EC	Nil	Nil	4-6 PC,4-6 EC	Nil	Nil	Nil	Nil	Nil	Nil

***PC- Pus Cells, EC-Epithelial Cells**

URINE AND MOTION ANALYSIS

Si.No	OP No.	Before treatment			After treatment			Before treatment			After treatment		
		Albumin	Sugar	Deposits	Albumin	Sugar	Deposits	Ova	Cyst	Occult blood	Ova	Cyst	Occult blood
23.	S1522	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
24.	S1940	Nil	Present	2-4 PC, 2-4 EC	Nil	Nil	1-2 PC,1-2EC	Nil	Nil	Nil	Nil	Nil	Nil
25.	S2500	Nil	Nil	1-2 PC, 1-2 EC	Nil	Nil	2-3 PC, 2-3EC	Nil	Nil	Nil	Nil	Nil	Nil
26.	S2612	Nil	Nil	2-4 PC, 4-6EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
27.	S3767	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
28.	S5177	Nil	Nil	6-8 PC, 4-6 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
29.	S5981	Nil	Nil	1-2 PC, 1-2 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
30.	S7161	Nil	Nil	1-2 PC, 1-2 EC	Nil	Nil	2-3 PC, 2-3EC	Nil	Nil	Nil	Nil	Nil	Nil
31.	S7302	Nil	Nil	3-4 PC, 1-2 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
32.	S7801	Nil	Nil	4-6 PC, 2-4 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
33.	S9290	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
34.	T296	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
35.	T2479	Nil	Nil	2-4 PC,1-2 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
36.	T3182	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
37.	T3399	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
38.	T3592	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
39.	T5599	Nil	Nil	1-2 PC, 1-2 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
40.	T6085	Nil	Nil	1-2 PC, 2-4 EC	Nil	Nil	3-4 PC, 1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
41.	T6511	Nil	Nil	4-6 PC, 4-6 EC	Nil	Nil	3-4 PC, 1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
42.	T8288	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
43.	T8327	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
44.	T8557	Nil	Nil	4-6 PC, 2-4 EC	Nil	Nil	3-4 PC, 1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
45.	T8642	Nil	Nil	4-6 PC, 4-6 EC	Nil	Nil	3-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil

***PC- Pus Cells, EC-Epithelial Cells**

URINE AND MOTION ANALYSIS

46.	T8657	Nil	Nil	4-6 PC, 6-8 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
47.	T8984	Nil	Nil	1-2 PC, 1-2 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
48.	T9500	Nil	++	2-4 PC, 2-4 EC	Nil	++	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
49.	U158	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-4 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
50.	U557	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-3 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
51.	U1103	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	3-4 PC, 1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
52.	U1199	Nil	Nil	1-2 PC, 1-2 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
53.	U1882	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-4 PC, 2-3 EC	Nil	Nil	Nil	Nil	Nil	Nil
54.	U2501	Nil	Nil	2-3 PC, 1-2 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
55.	U3431	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
56.	U4124	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	1-2 PC,1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
57.	U4466	Nil	Nil	3-4 PC, 1-2 EC	Nil	Nil	3-4 PC, 1-2 EC	Nil	Nil	Nil	Nil	Nil	Nil
58.	U5853	Nil	Nil	1-2 PC, 1-2 EC	Nil	Nil	6-8 PC, 3-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
59.	U5855	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	Nil	Nil	Nil	Nil
60.	U5862	Nil	Nil	2-4 PC, 2-4 EC	Nil	Nil	2-3 PC, 2-3 EC	Nil	Nil	Nil	Nil	Nil	Nil

***PC- Pus Cells, EC-Epithelial Cells**

RESULT OF THE TREATMENT

Si No.	IP No.	Name	Age	Sex	DOA	DOI	DOD	No of days treated	Improvement
1.	O95	Ragilabegam	45	F	26.07.2006	2 months	15.09.2006	48	GOOD
2.	111	Gomathi	42	F	26.07.2006	3 years	15.09.2006	48	C.RELIEVED
3.	110	Tamilarasi	50	F	26.07.2006	3 years	15.09.2006	48	C.RELIEVED
4.	117	Umavathy	35	F	04.08.2006	2 years	24.09.2006	48	MODERATE
5.	119	R. Mohana	35	F	05.08.2006	2years	25.09.2006	48	MODERATE
6.	123	Vedhavalli	48	F	07.08.2006	5years	27.09.2006	48	GOOD
7.	1299	B. Tharabai	39	F	09.08.2006	2years	29.09.2006	48	MODERATE
8.	189	Rajalakshmi	36	F	25.10.2006	5years	15.12.2006	48	GOOD
9.	197	Kamalam	47	F	30.10.2006	3months	18.12.2006	48	GOOD
10.	200	Sivagami	55	F	02.11.2006	1month	21.12.2006	48	GOOD
11.	202	Malarvizhi	35	F	04.11.2006	3years	23.12.2006	48	GOOD
12.	203	Mathuram	60	F	04.11.2006	1year	23.12.2006	48	GOOD
13.	480	Arumugam	50	M	06.11.2006	1½years	25.12.2006	48	GOOD
14.	485	Tamilarasan	43	M	07.11.2006	1½months	26.12.2006	48	MODERATE
15.	486	Vijayakumar	28	M	08.11.2006	4years	27.12.2006	48	GOOD
16.	217	Pappathy	60	F	19.11.2006	6years	07.01.2007	48	GOOD
17.	219	A.Valli	39	F	20.11.2006	1½years	08.01.2007	48	GOOD
18.	495	Elumalai	60	M	20.11.2006	3years	08.01.2007	48	C.RELIEVED
19.	494	Bakthavatchalam	51	M	20.11.2006	9years	08.01.2007	48	MODERATE
20.	501	Gopinath	37	M	24.11.2006	2½years	12.01.2007	48	GOOD
21.	504	Krishnamoorthy	60	M	27.11.2006	5years	15.01.2007	48	GOOD
22.	249	Premavathy	42	F	22.12.2006	5years	09.02.2007	48	C.RELIEVED

RESULT OF THE TREATMENT

Si No.	OP No.	Name	Age	Sex	DOA	DOI	DOD	No of days treated	Improvement
23.	S1522	K.Valli	39	F	31.10.2006	1year	19.12.2006	48	GOOD
24.	S1940	S. Murugan	48	M	01.11.2006	1½year	20.12.2006	48	GOOD
25.	S2500	Chakkaraphani	60	M	03.11.2006	4months	23.12.2006	48	MODERATE
26.	S2612	Pushpakumari	43	F	03.11.2006	1year	23.12.2006	48	GOOD
27.	S3767	Bhuvaneshwari	38	F	11.11.2006	8years	31.12.2006	48	GOOD
28.	S5177	Vijayalakshmi	52	F	11.11.2006	5years	30.12.2006	48	C.RELIEVED
29.	S5981	Revathy	38	F	13.11.2006	5years	01.01.2007	48	GOOD
30.	S7161	R.Vasantha	59	F	16.11.2006	6months	04.01.2007	48	GOOD
31.	S7302	S.Valarmathy	40	F	16.11.2006	6months	04.01.2007	48	GOOD
32.	S7801	Kasilingam	40	M	18.11.2006	6months	06.01.2007	48	C.RELIEVED
33.	S9290	Pradeepkumar	33	M	22.11.2006	3years	10.01.2007	48	GOOD
34.	T296	Dawood	60	M	24.11.2006	3months	14.01.2007	48	GOOD
35.	T2479	Malliga	35	F	29.11.2006	3months	17.01.2007	48	GOOD
36.	T3182	Seethalakshmi	40	F	01.12.2006	4years	20.01.2007	48	GOOD
37.	T3399	C.Mangalam	46	F	01.12.2006	2years	19.01.2007	48	GOOD
38.	T3592	Tamilselvi	44	F	02.12.2006	2years	22.01.2007	48	GOOD
39.	T5599	Knight	43	M	07.12.2006	3months	29.01.2007	48	GOOD
40.	T6085	Rajenthiran	58	M	08.12.2006	6months	27.01.2007	48	MODERATE
41.	T6511	Neelavathi	50	F	09.12.2006	1year	27.01.2007	48	MODERATE
42.	T8288	D.Amutha	32	F	13.12.2006	5months	31.01.2007	48	C.RELIEVED
43.	T8327	N.Shanthi	36	F	13.12.2006	3years	31.01.2007	48	C.RELIEVED
44.	T8557	R.Revathy	32	F	14.12.2006	6months	01.02.2007	48	MODERATE

RESULT OF THE TREATMENT

45.	T8642	S.Kamaraj	52	M	14.12.2006	5½years	01.02.2007	48	C.RELIEVED
46.	T8657	S.Kamala	48	F	14.12.2006	5years	01.02.2007	48	GOOD
47.	T8984	Gandhi	35	M	15.12.2006	6months	03.02.2007	48	GOOD
48.	T9500	K.Devagi	54	F	16.12.2006	6months	03.02.2007	48	C.RELIEVED
49.	U158	C.Kannan	60	M	18.12.2006	4months	05.02.2007	48	C.RELIEVED
50.	U557	Kanniga parameshwari	36	F	18.12.2006	1year	05.02..2007	48	GOOD
51.	U1103	Pitchaiammal	43	F	20.12.2006	2years	07.02.2007	48	GOOD
52.	U1199	Saraswathi	50	F	20.12.2006	10months	07.02.2007	48	GOOD
53.	U1882	Kanniga	51	F	22.12.2006	5years	10.02.2007	48	GOOD
54.	U2501	U. Kannagi	44	F	23.12.2006	5months	10.02.2007	48	MODERATE
55.	U3431	Lalitha	44	F	26.12.2006	1½year	13.02.2007	48	GOOD
56.	U4124	D.Vasanthi	42	F	27.12.2006	2years	14.02.2007	48	GOOD
57.	U4466	K.Neelofar	34	F	28.12.2006	1year	15.02.2007	48	MODERATE
58.	U5853	K.Balakrishnan	47	M	31.12.2006	5years	19.02.2007	48	GOOD
59.	U5855	S.Parthasarathi	40	M	31.12.2006	4years	19.02.2007	48	GOOD
60.	U5862	R.Pattabiraman	37	M	31.12.2006	3years	18.02.2007	48	GOOD

* C.RELIEVED –CLINICALLY RELIEVED

DOA – DATE OF ADMISSION

DOI – DURATION OF ILLNESS

DOD – DATE OF DISCHARGE.

DISCUSSION

The retrospective review of the disease Ceganavaatham begins from the correlation with the signs and symptoms of the disease Cervical Spondylosis and then initial sorting of information among the data extracted for analysis including age, sex, duration of presenting symptoms, predisposing or precipitating factors that provoked attack and their radiological findings.

The drugs used for this clinical trial are Sarvaangavaatha Chooranam and Vaatha Noii Thylum. The detailed discussion of this dissertation topic by the author is based on the results and observations.

Age distribution:

This study shows the highest incidence of Ceganavaatham is between 31- 40 years of age. This was reported in majority of the 60 cases.

Sex distribution:

The majority affected sex is female (66.7%). The common cause for this may be entrapping of calcium from their body and from history taking it was concluded that reasons for female predominance.

Living Lands (Thinai):

In this study, 100% of cases were from Neithal land.

Neithal is the land, which is responsible for Vaatha diseases, may be the reason for the higher incidence.

Gunam (Quality of the individual):

All the patients (100%) under this analysis were predominantly of Rajogunam assessed from interrogation and other observations.

Socio - economic status:

63.3% cases of Ceganavaatham belong to the middle class and the rest (36.7%) to the low socio – economic status.

Seasonal distribution:

Koothirkaalam showed the highest incidence of 65% and 23.3% cases were reported during Munpanikaalam. 11.7% cases were reported during Mudhuvenirkaalam.

Precipitating factors:

Already the author has explained that ageing is the common cause for Ceganavaatham. Apart from that, occupation takes the major part (51.7%) of the causative factor and 48.3% of cases with history of increased household works.

Occupational references:

Clerical work accounts for the highest number (31) of cases followed by packing work which accounts for 5 cases (8.3%). Maintaining the same posture throughout the working hours produces the impact.

Clinical Manifestations:

Pain in the nape and mental depression were present in all the 60 cases (100%). 93.3% of cases had pain in upper limbs. The other important features were neck stiffness (71.7%), headache (61.7%), numbness in upper limbs (56.7%), giddness (46.7%), etc.

Derangement of Vaatham:

Viyaanan, Samaanan and Naagan were affected in all the 60 cases (100%)

Derangement of Pittham:

Saathaga Pittham was affected in all the 60 cases (100%)

Derangement of Kabam:

Santhigam and Avalambagam were affected in all the 60 cases (100%).

Udal Thaathukkal

In all the 60 cases (100%) saaram was affected that produced symptoms like lethargy and mental depression. Senneer was affected in 15 cases (25%) that produced symptoms of anaemia. Oon was affected in 43 cases (71.7%), Kozhuppu was affected in 36 cases (60%), Enbu was affected in all the 60 cases that produced symptoms like difficult to move the neck, degenerative and osteophytic changes in cervical region of the vertebral column. Sukkilam / Suronitham were affected in 3 cases (5%).

Gnanenthiriyam

Among the 60 cases Mei was affected in 34 cases (56.7%), Kann was affected in 31 cases (51.7%) and Vaai was affected in 15 cases (25%).

Kanmenthiriyam

Among the 60 cases Kai was affected in 56 cases (93.3%). Eruvaai was affected in 12 cases (20%) and Karuvaai was affected in 3 cases (5%).

Eight parameters in our diagnostic system (Envagai Thervugal):

By sparisam, 41.7% cases showed tenderness. Vizhi was affected in 32 cases (53.3%). At the time of admission 12 patients (20%) were reported to have constipation. It was treated by purgative and laxative medicines.

In moothiram, Neerkuri and Neikkuri were analysed. In 46 cases (76.7%) oil slowly spread, and in 14 patients (23.3%) oil spread like pearl (Kaba neer).

Pulse reading (Naadi) was noted in all the 60 cases and PitthaVaatham was observed in 30 cases (50%) VaathaPittham was observed in 28 cases (46.7%). PitthaKabam was was observed in 2 cases (3.3%).

Clinical laboratory investigations:

By laboratory investigations anaemia was found in 15 cases (25%). ESR was found raised in early stages and after treatment it was found reduced.

Radiological studies:

Among the 60 patients the X-ray findings reveal degenerative changes and osteophytes in all the 60 patients (100%). Loss of Cervical Lordosis was found in 20 cases (33.3%) and intervertebral space narrowing in 15 cases (25%).

- ✓ Before treatment, loss of Cervical Lordosis was found in 20 cases and after treatment Cervical Lordosis was maintained normal in 2 patients.

Treatment:

The treatment was aimed at normalizing the deranged thodams and providing relief from symptoms. Before treatment the patients were advised to take Sitthathi ennai – 15 ml with Sombu kudineer during early morning for purgation. The patient was advised to take rest without internal medicines and other activities on that day.

The author treated the patients with trial drugs Sarvaangavaatha Chooranam (internal) -1½gm, bid with hot water and Vaatha Noii Thylum (external). During treatment, the patients were advised to follow paththiyam (avoid tamarind, tubers etc) and advised to avoid pillows.

Sirappu Maruthuvam Techniques (methods) applied in Ceganavaatham patients

a) Thokkanam:

All the 60 cases were treated additionally by Thokkanam with Vaatha Noii Thylum twice a day regularly. The procedural photography illustrations of the patients have been given by the author.

b) Exercises:

All the 60 cases were asked to do simple exercises for upper limbs and neck.

Curative Effect:

On the basis of curative effect of the trial drugs, all symptoms were relieved in 11 patients (18.3%). Good improvement was assessed in 37 patients (61.7%). Moderate improvement was assessed in 12 patients (20%).

No toxic and side effects were clinically observed in all cases.

- ✓ Qualitative analysis of drugs done in C.L.Baid Metha College of pharmacy, Thoraippaakkam, Chennai-96, reveals Sarvaangavaatha Chooranam contains Calicum, Iron (ferrous), Sulphate, Chloride, Phosphate, Sugar, Alkaloids, Protein, Tannins, Phenols, Aminoacid, Cardiac glycosides and Terpenoids.

- ✓ Pharmacological studies done in C.L.Baid Metha College of pharmacy, Thoraippaakkam, Chennai-96, reveals Sarvaangavaatha Chooranam bears Analgesic, Anti- inflammatory, Anti-Pyretic and Anti-oxidant actions.

- ✓ Toxicological studies of Sarvaangavaatha Chooranam were done in C.L.Baid Metha College of pharmacy, Thoraippaakkam, Chennai-96. Acute oral toxicity study did not exhibit any mortality in rats. Repeated oral toxicity did not show toxicity in renal and haematological parameters. The reverse pharmacological studies of SVC have got good correlation with clinical study report presented in this thesis. The present study also shows the safety profile of the drug in repeated dosing for 21 days, except in the liver function tests. Since there are no significant pathological changes of normal architecture of liver treated with SVC for 21 days, the altered levels of ALT, AST and ALP may be attributed to some other unknown factors (eg. Pesticide residue in raw materials used etc) which are to be probed.

- ✓ Histopathological study did not show evidence of pathological lesions in the tissues tested.

SUMMARY

Based on Yugi Vaithiya Chinthaamani, 60 cases of Ceganavaatham were diagnosed clinically and 22 of them were admitted and treated with the trial drugs in the inpatient ward and the rest were treated in the outpatient department of Sirappu Maruthuvam of the Ayothidoss Pandithar Hospital attached to National Institute of Siddha, Tambaram Sanatorium, Chennai- 47.

- The various Siddha methods of examination of the disease were carried out and the data were recorded in the proforma.

- The trial medicines selected for both internal and external treatment were Sarvaangavaatha Chooranam – 1½ gm bid and Vaatha Noii Thylum – 30 to 50 ml.

- Before starting the treatment careful detailed history was taken and recorded for the 60 selected cases.

- During the period of treatment all the patients were put under paththiyam (a specific dietary regimen).

- Loboratory investigations were done periodically for all the cases and radiological investigations were done for all the cases before and after treatment. Before treatment, loss of Cervical Lordosis was found in 20 cases and after treatment Cervical Lordosis was maintained normal in 2 patients.

- The observations made during the clinical study show that the internal drug Sarvaangavaatha Chooranam and external application - Vaatha Noii Thylum are clinically effective.

- As per our Siddha Meteria Medica the ingredients of the trial medicines were found to have the property of controlling Vaatha diseases.

CONCLUSION

The patients of Ceganavaatham were treated with Sarvaangavaatha Chooranam 1½ gm, twice a day with hot water (Internally) and Vaatha Noii Thylum (Externally). The clinical evaluation of all the 60 cases of Ceganavaatham under study has brought out the following results.

Clinically relieved	– 18.3%
Good improvement	– 61.7%
Moderate improvement	– 20%

The results of the clinical trial indicate the fruitful effect of the drugs. However there is recurrence of symptoms over months in some of the Ceganavaatham patients who engage themselves in the same occupation again or go back to their fast and mechanical lifestyle. Most of the patients in whom the symptoms recurred were housewives who after their discharge from hospital continue to do their household works.

Hence these drugs and methodology of the treatment will become one of the milestones in treating Ceganavaatham successfully expecially in this era of fast and suphisticated life-style.

PREPARATION OF TRIAL DRUGS

SARVAANGAVAATHA CHOORANAM

REFERENCE:

Kannusamy Vaithya Chinthaamani (Chikitcha Rathna Dheebam -Part II), Page 164.

INGREDIENTS:

1. Bark of Kondrai - Palam 1
2. Bark of Mavilangu - Palam 1
3. Bark of Chithiramoolam - Palam 1
4. Root of Kandangkatthiri - Palam 1
5. Root of Sangan - Palam 1
6. Root of Vaathamadakki - Palam 1
7. Bark of Boothakarappaan - Palam 1
8. Thoothuvalai - Palam 1
9. Vellarugu - Palam 1
10. Kayam - Palam 1
11. Chukku - Palam 1
12. Inthuppu - Palam 1
13. Valaiyaluppu - Palam 1
14. Vediuppu - Palam 1
15. Kalluppu - Palam 1

METHOD OF PREPARATION:

All the 15 ingredients mentioned above are powdered to Chooranam.

DOSE:

Thirikadipramaanam, twice a day, 1 Mandalam(48 days).

ADJUVENT:

Hot water

INDICATIONS:

Sarvaangavaatham, Soolai, Karpasoolai, Kudalvaatham, Vaathasoolai, Ratthapitthasoolai.

DIETARY REGIMEN:

Itchaa Patthiyam

VAATHA NOII THYLUM

REFERENCE:

Aathmaratchamirtham Ennum Vaithya Saarasangiragam, Page 368.

INGREDIENTS:

1. Juice of Kalli - Padi 1
2. Juice of Thaluthaalai - Padi 1
3. Juice of Erukku - Padi 1
4. Juice of Notchi - Padi 1
5. Gingelly oil - Padi 1
6. Chempulichai
7. Agil
8. Kostam
9. Chukku
10. Root of Saaranai
11. Koduveli
12. Thippilimoolam
13. Vasambu
14. Kaattumurungai
15. Root of Poolai
16. Kukkil
17. Inthuppu
18. Amukkara kilangu

- Take equal amount of each of the items (6-18) mentioned above are make into Chooranam.

METHOD OF PREPARATION:

All juices are mixed with oil, and then powders of the ingredients are added then heated and filtered.

INDICATIONS:

Kanna vali, Kaathu Noii, Kazhuththu piddippu, Thimirvaatham, Kaduppu, Tholvali, Thanurvaatham, Thodai vali, Pakkavaatham, Engum odi valikkum vaatham.

PROPERTIES OF TRIAL DRUGS

கொன்றைப்பட்டை

Botanical Name	Cassia fistula
Family	Caesalpiniaceae
English name	Indian ladurnam
Synonyms	Konnai, Perunkonrai, Kiruthamalam, AakuVaatham
Parts used	Bark

Organoleptic Characters

Taste	Kaippu (Bitter), Thuvarppu
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Laxative	Malamilakki
Astringent	Thuvarppi
Irritant	Erichal undakki
Anti-inflammatory, Analgesic Anti-pyretic, Anti-oxidant	

Therapeutic effects

"குட்டங் கிருமி கொடுஞ்சூலை வாதமையம்
துட்ட மலமருசி தூரப்போம் - தட்டிச்
சுரக்கின்ற பேதியுண்டாம் துய்க்கத் துவர்க்கும்
சரக்கொன்றைக் காரணங்கே சாற்று."

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 401)

Phytochemicals :

Leucocyanidin, kaempherol, beta-sitosterol, anthraquinoneglycosides, sennosides A & B, Fistucacidin (flavoNoids) – Anti-inflammatory

மாவிலங்குப்பட்டை

Botanical name	Crataeva magna, C. nurvala
Family	Capparaceae
English name	Three leaved caper
Synonyms	Maavilangu**,** Kumarakam**,** Varani
Parts used	Bark

Organoleptic Characters

Taste	Kaippu (Bitter)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Laxative	- Malamilakki
Lithontriptic	- Karkaraichi
Anti-inflammatory, Diuretic, Tonic	

Therapeutic effects

"மாவிலிங்கப் பட்டையினால் வாதமொடு சன்னிகளும்
பாவுகின்ற கல்லடைப்பும் பாறுமே"

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 755)

Phytochemicals :

Saponin, tannin, friedelin, lupeol, betulinic acid and diosgenin.

Lupeol – lithotriptic activity

கொடிவேலிப்பட்டை

Botanical name	Plumbago zeylanica
Family	Plumbaginaceae
English name	Ceylon lead-wort
Synonyms	Cithiramoolam,
Parts used	Bark

Organoleptic Characters

Taste	Kaarppu (Pungent)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Anti-periodic - Murai veppakatri
Diaphoretic - Viyarvaiundakki
Anti-septic,Anti-inflammatory,Diuretic

Therapeutic effects

கட்டிவிர ணங்கிரந்தி கால்கள் அரையாப்புக்
கட்டிச்சூ லைவீக்கங் காழ்மூலம் - முட்டிரத்தக்
கட்டுநீ ரேற்றங் கனத்த பெருவயிறும்
அகட்டுங் கொடிவேலி யாம்.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 381)

Phytochemicals :

Plumbagin, enzymes protease and invertase

கண்டங்கத்தரி வேர்

Botanical name	Solanum xanthocarpum (Solanum surrattense)
Family	Solanaceae
English name	Wild eggs plant
Synonyms	Udaravani, Udavani, Sutturam
Parts used	Root

Organoleptic Character		**Therapeutic Actions**
Taste	Kaarppu (Pungent)	Expectorant - Kozhayagatri
Potence	Veppam (Heat)	Diuretic - Siruneerperukki
Pirivu	Kaarppu (Pungent)	Carminative - agattuvayvagatri
		Anodyne, Anti-inflammatory, Analgesic
		Mild Anti-spasmodic, Anti-pyretic

Therapeutic effects

காச சுவாசங் கதித்தகூய மந்தமனல்
வீசுசுரஞ் சன்னி விளைதோடம் - ஆசுறுங்கால்
இத்தரையு ணிற்கா எரிகாரஞ் சேர்க்கண்டங்
கத்தரியுண் டாமாகிற் காண்.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 213)

Phytochemicals :

Solanine, beta-solamargine, solasodine, quercetin diglycoside, sitosterol.
Solanine – Anti-inflammatory, Analgesic.
Quercetin diglycoside & Sitosterol – pain reliever

சங்கன் வேர்

Botanical name	Azima tetracantha
Family	Salvadoraceae
English name	Mistletoeberry thorm, Four spined meneita
Synonyms	Changanchedi, Narchangan, Mutchangan
Parts used	Root

Organoleptic Characters		**Therapeutic Actions**
Taste	Kaippu (Bitter)	Diuretic - Siruneerperukki
Potence	Veppam (Heat)	Anti-periodic - Murai veppakatri
Pirivu	Kaarppu (Pungent)	Anti-inflammatory

Therapeutic effects

வீக்கம் கரப்பான் விதாகம் கிரந்திகுன்மம்
ஊக்கமிகு சூலைவாய் வோடுபித்தத் - தாக்குவிடம்
வீறுமோ கண்துலங்கும் வீசுபசி ரத்தமுண்டாம்
கூறுசங்கம் வேரிலை கட்கு.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 415)

Phytochemicals:

Glucosinolates, flavoNoids, alkaloids, azimine, azcarpine, and carpaine

வாதமடக்கி வேர்

Botanical name	Delonix elata (Poinciana elata)
Family	Leguminosae
English name	Tiger Bean
Synonyms	Vaathanarayanan, Vaatharakkatchi, Perungondrai
Parts used	Root

Organoleptic Characters

Taste	Kaippu (Bitter)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Vaathamatakki - Anti-vaatha
Pitthakari
Urchagakari
Anti- periodic, Febrifuge

Therapeutic effects

நன்மை தரும்வாத நாரா யணமரத்தின்
தன்மை இனிதுரைக்கின் தாழ்குழலே - வன்மையுறும்
வாத வலிகுடைச்சல் வாட்டுகணுச் சூலைஎலாம்
பூதலத்தில் விட்டோடிப் போம்

- பதார்த்த குணவிளக்கம் மூலவர்க்கம், பக்கம் 637

Phytochemicals:

Oxalic acid, phytic acid, tannin and dietary fiber, iron, calcium

பூதகரப்பான் பட்டை

Botanical name	Sterculia foetida
Family	Sterculiaceae
English name	Poon tree
Synonyms	Perumaram, Peenaarimaram
Parts used	Bark

Organoleptic Characters

Taste	Kaippu (Bitter)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Laxative - Malamilakki
Diuretic - Siruneerperukki
Diaphoretic - Viyarvaiundakki
Anti-inflammatory, Analgesic, Sedative

Therapeutic effects

பெருமரப் பட்டையது பேதி கிராணி
மருவிரத்த நோயினத்தை மாற்றுந் - திருவே
நடலைபுரி வாதத்தை நாடாத கற்றும்
உடலையிரட் சிக்குமென வோது.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 684)

Phytochemicals:

Lupenone, lupeol, betulin, sterculoside along with 3',4',3,7 & 3',4',5,7 tetramethyl ethers of quercetin

தூதுவளை

Botanical name	Solanum trilobatum
Family	Solanaceae
English name	Three lobed night shade
Synonyms	Singavalli, Alarkkam
Parts used	Whole plant

Organoleptic Characters		**Therapeutic Actions**	
Taste	Siru kaippu (Bitter),	Tonic	- Uramaakki
	Kaarppu (Pungent)	Stimulant	-
Potence	Veppam (Heat)	Veppamundakki	
Pirivu	Kaarppu (Pungent)	Cardiac tonic, Carminative	
		Expectorant, Anti-tussive	

Therapeutic effects

தூது பத்திரி யூண்சுவை யாக்கும்பூ
தாது வைத்தழைப் பித்திடும் காயது
வாத பித்தக பத்தையு மாற்றுவேர்
ஓதும் வல்லிபன் நோயுமொ ழிக்குமே.

- தேரையர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 535)

Phytochemicals:

Beta- solamarine, solasodine, linoleic, palmitic, oleic, & steric acids.

வெள்ளறுகு

Botanical name	Enicostemma axillare
Family	Gentianaceae
English name	Indian gentian
Synonyms	Vallari
Parts used	Whole plant

Organoleptic Characters		**Therapeutic Actions**	
Taste	Kaippu (Bitter)	Tonic	- Uramaakki
Potence	Veppam (Heat)	Laxative	- Malamilakki
Pirivu	Kaarppu (Pungent)	Alterative	- Udal thetri
		Anti-inflammatory, Carminative	

Therapeutic effects

குன்மமொடு வாய்வு குடல்வாதம் சூலையிவை
சென்மம்விட் டோடிச் சிதையுங்காண் - வன்முலையாய்
உள்ளூறுகி ரந்திசொறி யொட்டிய சிரங்குமறும்
வெள்ளறுகு தன்னை விரும்பு.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம்844)

Phytochemicals:

Ophelic acid, tannins gentianine, erythrocentaurin, gentiocrucine, apigenin

பெருங்காயம்

Botanical name	Ferula asafoetida
Family	Umbelliferae (Apiaceae)
English name	Asafoetida
Synonyms	Perungayam**,** Valligam, Ingu
Parts used	Gum resin

Organoleptic Characters		**Therapeutic Actions**	
Taste	Kaippu (Bitter)	Antispasmodic	- Isivagatri
Potence	Veppam (Heat)	Laxative	- Malamilakki
Pirivu	Kaarppu (Pungent)	Diuretic	- Siruneerperukki
		Anti-inflammatory, Nervine tonic, Sedative	

Therapeutic effects

தந்தவே தந்த மூலத்தெழும்பிணி
சருவகாளம் விருச்சிகங்கீடம்மா
மந்தம்வாதம் உதரவர்த்தம் அல்குல்நோய்
மார்பணங்கட்ட குன்மம்மகோதரம்
.....

- தேரையர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 710)

Phytochemicals:

Camphene, alphapinene, free ferulic acid, umbelliferone, a lactone of umbellic acid. Essential oil – stimulate nervous system.

சுக்கு

Botanical name	Zingiber officinales
Family	Zingiberaceae
English name	Dried ginger
Synonyms	Sunti, Naagaram
Parts used	Rhizome

Organoleptic Characters

Taste	Kaarppu (Pungent)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Carminative	-Agattuvayvagatri
Stimulant	- Veppamundakki
Stomachic	- Pasithee thoondi

Anti-inflammatory, Analgesic, Nervine tonic
Anti-depressants, Anti-narcotic, Anti-oxidant

Therapeutic effects

சூலைமந்தம் நெஞ்செரிப்பு தோடமேப் பம்மழலை
மூலம் இரைப்பிருமல் மூக்குநீர் -வாலகப
தோடமதி சாரந் தொடர்வாத குன்மநீர்த்
தோடம்ஆ மம்போக்குஞ் சுக்கு.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 470)

Phytochemicals :

Zingiberene, Isabolene, Gingerols, Shogaols, Zingiberol.
Shogaol – Analgesic; Gingerol – Anti-inflammatory, Analgesic

இந்துப்பு

Chemical name	Sodium chloride impura
English name	Rock Salt
Synonyms	Sainthavam, Sinthooram

Organoleptic Characters

Taste	Uvarppu (Saline)
Potence	Veppam (Heat)
Pirivu	Inippu (Sweet)

Therapeutic Actions

Laxative	- Malamilakki
Diuretic	- Siruneerperukki
Carminative	-Agattuvayvagatri

Therapeutic effects

சென்னிக்கண்ணா பற்றூர் செவிகவுள்கண் டம்பகநோய்
சந்நியா சங்காசந்தாகமிரைப் - புன்னிரத்த
மூலஞ் சிலந்திநளி மூடிகநஞ் சூதை வலி
சூலஞ் சிதையுமிந்தாற்சொல்.

- குணபாடம் II & III, பக்கம் 371

Chemical contituents

Calcium sulphate

வளையலுப்பு

Chemical name	Magnesium Aluminum Silicate
English name	Fullers' earth / Attapulgite
Synonyms	Madavaarkkarathuppu

Organoleptic Characters

Taste	Uvarppu (Saline)
Potence	Veppam (Heat)
Pirivu	Inipu (Sweet)

Therapeutic Actions

Diuretic	- Siruneerperukki
Carminative	-Agattuvayvagatri

Therapeutic effects

துளையார் குடல்வாதத் தொந்தவா தத்தோ
டிளையாச் சுவாசமறு மின்னும் - வளையலுப்பாற்
குன்மவலி சூலைவெப்பங் கூறாப்பி லீகமிவை
சென்மம்விட் டோடுமெனத் தேர்.

- குணபாடம் II & III, பக்கம் 433

Phytochemicals:

Montmorillonite, beidellite, silica, aluminium

வெடியுப்பு

Chemical name	Potassium nitrate
English name	Salt petre
Synonyms	Pottiluppu

Organoleptic Characters

Taste	Uvarppu **(**saline)
Potence	Kulirchi (Cold)
Pirivu	Inippu (Sweet)

Therapeutic Actions

Diuretic	- Siruneerperukki
Diaphoretic	- Viyarvaiperukki
Refrigerent	

Therapeutic effects

சூதக வாயுவொடு சோணிதத்தின் வாதமும்போம்
வாதவலி குன்மமிவை மாறுங்காண் - மீதாங்
கொடிய வயிரிழியுங் கோழைகப மேகும்
வெடியுப்புத் தன்னை விளம்பு.

- குணபாடம் II & III, பக்கம் 444

Phytochemicals:

45-75 % actual salt, sulphate, chloride of Sodium, insoluble matter

கல்லுப்பு

Chemical name	Sodium chloridum impura
English name	Rock salt, Common salt
Synonyms	Kadarkuruvi

Organoleptic Characters

Taste	Uvarppu (Saline)
Potence	Veppam (Heat)
Pirivu	Inippu (Sweet)

Therapeutic Actions

Antiseptic
Antiperiodic - Murai veppakatri
Deobstruent - Veekamurukki
Carminative, Stimulant, Tonic

Therapeutic effects

ஐயமறுஞ் சூலை யரோசிபித்தஞ் சத்தியொடு
வெய்யபிணி யட்டகுன்மம் விட்டேகும் - பெய்வளையே
வாதமதி தாகம் மலக்கட்டும் போமுலகிற்
கோதறுகல் லுப்பைக் கொடு.

- குணபாடம் II & III, பக்கம் 381

Phytochemicals:

Small propotion of iodine

வாதநோய் தைலம்

கள்ளி

Botanical name	Euphorbia ligularia (E. neriifolia)
Family	Euphorbiaceae
English name	Milk hedge plant
Synonyms	Ilaykkalli
Parts used	Stem

Organoleptic Characters

Taste	Kaippu (bitter), Kaarppu (Pungent)
Pirivu	Kaarppu (Pungent)
Potence	Veppam (Heat)

Therapeutic Actions

Emetic - Vanthiyundakki
Anti-inflammatory, Anodyne, Carminative, Mild analgesic, Laxative, Diuretic

Therapeutic effects

வாதமுடக்கலும் வன்கிரந்தி குட்டமும்போஞ்
சீதமொழியுங் கிருமி சேருமோ - மாதே
பருகுபக்க நோயுடனே பாழ்ங்கரப்பான்றீருந்
திருகுக்கள்ளிப் பாலாற்றெளி.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 260)

Phytochemicals:

Euphol, monohydroxy triterpene, nerifoliol, taraxerol, beta- amyrin, caoutchouc.

தழுதாழை

Botanical name	Clerodendron phlomoidis
Family	Verbenaceae
English name	Wind killer
Synonyms	Thakkari, Vaathamatakki
Parts used	Leaves

Organoleptic Characters

Taste	Kaippu (bitter), Thuvarppu (astringent)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Alterative - Utalthetri
Astringent - Thuvarppi
Tonic, Stomachic

Therapeutic effects

வாதப் பிடிப்பென்ற வற்காலி யைப்புலிபோற்
போதப் பிடிக்கும் புலவற்றோ - காத
அழுதாழைப் பினத்தை யுண்டா தகற்றுந்
தழுதாழைப் பன்னமது தான்.

- அகத்தியர் குணவாகடம், (குணபாடம் மூலிகை, பக்கம் 505)

Phytochemicals :

Luteolin, clerosterol, clerodin, clerodendrin A, Beta-sitosterol

எருக்கு

Botanical name	Calotropis gigantea
Family	Asclepiadaceae
English name	Mudar
Synonyms	Arukkan
Parts used	Leaves

Organoleptic Characters		**Therapeutic Actions**
Taste	Kaippu (bitter),	Alterative - Utalthetri
	Kaarppu (Pungent)	Stimulant - Veppamundakki
	Mathuram (sweet)	Laxative - Malamilakki
Potence	Veppam (Heat)	Tonic, Anti-spasmodic, Diaphoretic
Pirivu	Kaarppu (Pungent)	Anti-inflammatory, Anti-arthritic

Therapeutic effects

எலிவிடங் குட்டமைய மேறு கிருமி
வலிசூலை வாயுவிட மந்தம் - மலபந்தம்
எல்லா மகலு மெருக்கிலை யைக்கண்டால்
வில்லார் நுதலே விளம்பு.

-அகத்தியர் குணவாகடம், (குணபாடம் மூலிகை, பக்கம் 152)

Phytochemicals:

Leucocyanidin, Madar alban, Madar fluavil, black acid resin, Caoutchouc (free), yellow bitter resins, Calotropin.

Leucocyanidin – Anti-inflammatory,

Calophyllolide – Anti-inflammatory, Anti-arthritic

நொச்சி

Botanical name	Vitex negundo
Family	Verbenaceae
English name	Five leaved chaste tree
Synonyms	Nirgundi, Nithil
Parts used	Leaves

Organoleptic Characters

Taste	Kaippu (bitter),
	Kaarppu (Pungent)
	Thuvarppu (Astringent)
Potence	Veppam(Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Alterative - Utalthetri
Diuretic, Nervine tonic
Anti-inflammatory, Analgesic

Therapeutic effects

.....
கர நொச்சிற் பட்டையது
துள்ளுசன்னி வாத மகற்றும்....

- அகத்தியர் குணவாகடம், (குணபாடம் மூலிகை, பக்கம் 627)

Phytochemicals:

Monoterpenes agnuside, eurostoside, aucubin. butanol extract,
Leucoanthocyanidins,
Ethyl acetate extract of leaves – Anti-inflammatory,
Butanol extract of root – Anti-inflammatory, Analgesic

நல்லெண்ணெய்

Botanical name	Sesamum indicum
Family	Pedaliaceae
English name	Gingelly
Synonyms	El Ennai
Parts used	Seed oil

Organoleptic Characters

Taste	Kaarppu (Pungent)
Potence	Veppam(Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Demulcent - Ullazhalatri
Nutritive - UdalUramaakki
Anti-inflammatory

Therapeutic effects

புத்தி நயனக்குளிர்ச்சி பூரிப்பு மெய்ப்புளகஞ்
சத்துவங் கந்தி தனியிளமை - மெத்தவுண்டாங்
கண்ணோய் செவிநோய் கபாலவழல் காசநோய்
புண்ணோய்போ மெண்ணெய்யாற் போற்று.

- அகத்தியர் குணவாகடம், (குணபாடம் மூலிகை, பக்கம் 164)

Phytochemicals:

Sesamolin, linoleic acid, Alpha tinoleic acid, lecithin
Sesamum seed – Ca oxalate, Iron, Iodine, Molybdenum, Zn, Co, Ni
Anti-inflammatory effects due to presence of linoleic acid

செம்புளிச்சை

Botanical name	Erythroxylum monogynum
Family	Erythroxylaceae
English name	Bastard sandal
Synonyms	Semmanathi, Devadharu, Sendevadharu, Kaattu sandanam
Parts used	Leaves & bark

Organoleptic Characters

Taste	Kaippu **(**Slight bitter)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Diuretic	- Siruneerperukki
Diaphoretic	- Viyarvaiperukki
Stomachic	- Pasithee thoondi
Tonic	-Uramaakki

Phytochemicals:

(+)-hibaene [(+)- stachene] erythroxylol a(monogynol) erythroxylol b, erythroxydiol a, cinnamylcocaine, sesquiterpenes,bisabolene, cadinene

அகில்

Botanical name	Aqilaria agallocha
Family	Thymelaeaceae
English name	Aloe wood
Synonyms	Agaru, Kakathundam
Parts used	Wood

Organoleptic Characters

Taste	Kaippu (bitter),
	Kaarppu (Pungent)
	Siru inippu (Sweet)
Potence	Veppam (Heat)
Pirivu	Inippu (Sweet)

Therapeutic Actions

Deobsturant -Veekamurukki
Stimulant -Veppamundaki
Anti-inflammatory, Anodyne
Carminative, Tonic
Rejuvenative, Sedative

Therapeutic effects

நாசி யடைப்பு நவிரவிடி தாளுநோய்
வீசு நமைப்புடைகள் விட்டேகும் - பேசில்
சுகரு மயங்குந் துணைமுலையாய் நல்ல
அகரு மரத்தா லறி.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 6)

Phytochemicals :

Essential oil, sesquiterpenes, melofuran, agarol, aquillochin

கோஷ்டம்

Botanical name	Costus speciosus
Family	Costaceae
English name	Costus root
Synonyms	Kottam
Parts used	Rhizome

Organoleptic Characters

Taste	Kaippu (bitter)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Stimulant -Veppamundaki
Diaphoretic -Viyarvaiperukki
Tonic -Uramaakki
Anti-inflammatory

Therapeutic effects

திட்டிகவுள் அகடுகளஞ் சென்னி நாவாய்
செறிபிணிவெப்பு பதைப்புதா வர்த்தம் ஊதை
முட்டியெழு முளைவிரணம் சுவாசகாசம்
மூடிகத்தோ டரவுமர விடங்கள் மேகக்
கட்டிஅஜ கல்லிவிட பாகம் பூத
கணம்பால கிரகமொடு தாது நட்டஞ்

சொட்டிவரு பிரமிபித்தம் இவையொ ருங்கே
தொலையும்விர ணாரிக்குச் சுகப்போறாமே
- தேரையர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 406)

Phytochemicals:

Tharasamanigal, resiNoids, essential oil, inulin.

Saponins, alkaloids – Anti-inflammatory, Anti-arthritic

சுக்கு

Botanical name	Zingiber officinales
Family	Zingiberaceae
English name	Dried ginger
Synonyms	Sunti, Naagaram
Parts used	Rhizome

Organoleptic Characters

Taste Kaarppu (Pungent)

Potence Veppam (Heat)

Pirivu Kaarppu (Pungent)

Therapeutic Actions

Carminative -Agattuvayvagatri

Stimulant - Veppamundakki

Stomachic - Pasithee thoondi

Anti-depressants, Anti-narcotic, Anti-oxidant

Anti-inflammatory, Analgesic, Nervine tonic

Therapeutic effects

சூலைமந்தம் நெஞ்செரிப்பு தோடமேப் பம்மழலை
மூலம் இரைப்பிருமல் மூக்குநீர் -வாலகப
தோடமதி சாரந் தொடர்வாத குன்மநீர்த்
தோடம்ஆ மம்போக்குஞ் சுக்கு.
- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 470)

Phytochemicals:

Zingiberene, Isabolene, Gingerols, shogaols, zingiberol

Shogaol- Analgesic, Gingerol - Anti inflammatory, Analgesic

சாரணை வேர்

Botanical name	Trianthema portulacastrum
Family	Aizoaceae
English name	Spreading hog weeds
Synonyms	Vellaicharanai
Parts used	Root

Organoleptic Characters		**Therapeutic Actions**
Taste	Kaippu (Bitter)	Laxative - Malamilakki
Potence	Veppam (Heat)	Diuretic - Siruneerperukki
Pirivu	Kaarppu (Pungent)	Anti-inflammatory, Anti-pyretic

Therapeutic effects

சீதஞ் சலதோடந் தேமல்த மும்புகுன்மம்
வாதஞ் சிறுசிரங் வன்மேகம் - ஓதரிய
காசமுதல் நோயெல்லாங் கான்சா றடைக்கிழங்கால்
நாசமுறு மென்றே நவில்.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 424)

Phytochemicals:

Trianthemine, rutin, quercetin, caffeic acid, scopoletin, vanillic acid, cinnamic acid, sesuvin.

கொடிவேலி

Botanical name	Plumbago zeylanica
Family	Plumbaginaceae
English name	Ceylon lead-wort
Synonyms	Cithiramoolam,
Parts used	Root

Organoleptic Characters		**Therapeutic Actions**
Taste	Kaarppu (Pungent)	Anti-periodic - Murai veppakatri
Potence	Veppam (Heat)	Diaphoretic - Viyarvaiundakki
Pirivu	Kaarppu (Pungent)	Anti-septic, Anti-inflammatory, Diuretic

Therapeutic effects

கட்டிவிர ணங்கிரந்தி கால்கள் அரையாப்புக்
கட்டிச்சூ லைவீக்கங் காழ்மூலம் - முட்டிரத்தக்
கட்டுநீ ரேற்றங் கனத்த பெருவயிறும்
அகட்டுங் கொடிவேலி யாம்.

-அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 381)

Phytochemicals: Plumbagin, enzymes protease and invertase

திப்பிலிமூலம்

Botanical name	Piper longum
Family	Piperaceae
English name	Long-pepper-root
Synonyms	Narukku vaer, Modi vaer
Parts used	Root

Organoleptic Characters		**Therapeutic Actions**
Taste	Kaarppu (Pungent)	Stomachic - Pasithee thoondi
Potence	Veppam (Heat)	Tonic, Diuretic, Stimulant
Pirivu	Kaarppu (Pungent)	Purgative, Analgesic

Therapeutic effects

தாகபித்தஞ் சோகந் தணியாச் சுரமிருமல்
மேகங் குரற்கம்மல் மெய்க்கடுப்பும் - ஏகுங்காண்
திப்பிலிமூ லங்கண்டத் திப்பிலிய தாம்நறுக்குத்
திப்பிலியென் றேயொருக்காற் செப்பு.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 517)

Phytochemicals :

Piperine, Piplartine, triacontane, glycosides, piperlongumine, piperlonguminine. Piperine – anti pyretic.

வசம்பு

Botanical name	Acorus calamus
Family	Araceae
English name	Sweet-flag
Synonyms	Ukkiram, Persolla Marunthu, Pillai Marunthu
Parts used	Rhizome

Organoleptic Characters		**Therapeutic Actions**
Taste	Kaarppu (Pungent)	Carminative - Agattuvayvagatri
Potence	Veppam (Heat)	Stomachic - Pasithee thoondi
Pirivu	Kaarppu (Pungent)	Anti-inflammatory, Analgesic
		Anti-spasmodic, Nervine, Sedative

Therapeutic effects

பாம்பாதி நஞ்சற் புதப்புண் வலிவிடபாகங் குன்மம்
சூம்பா ரிரத்தபித் தம்முக நாற்றம்வன் சூலைசன்னி
வீம்பாம்பை காசம் பீலிகஞ் சிலிபதம் வீறிருமல்
தாம்பாங் கிருமி யிவையேகு மாசிவ சம்பினையே.

-தேரையர் குணவாகடம், (குணபாடம் மூலிகை, பக்கம் 788)

Phytochemicals:

Beta asarone, acorin, acoretin, calamine, calamenol 5.0, calamenone, acoric acid, sesquiterpeNoides, Ca, Fe, Mg, Zn, Na, Cd, Mn, Ni.Amino acid-tryptophan.
Asarone – Mild sedative, mild hypotensive, hypothermic,
Beta asarone, asarone – Anti-convulsant, Anti-cholinergic.

காட்டுமுருங்கை

Botanical name	Ormocarpum senNoides (Hedysarum senNoides)
Family	Papillonaceae (Leguminaceae)
Parts used	Bark

Organoleptic Characters

Taste	Kaippu (Bitter)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Tonic -Uramaakki
Stimulant

Therapeutic effects

தின்றாற் கசப்பாகுந்தீயாங் கொடுவிஷத்தைக்
கொன்றுவிடுங் கட்குங் குளிர்ச்சிதிரு - மென்றுமைய
மோட்டும்பேர் பூவிலைகா யுற்றபிசினும்பிஞ்சுங்
காட்டுப் புனமுருங்கை காண்.

- பதார்த்த குணவிளக்கம் மூலவர்க்கம், பக்கம் 236

Phytochemicals:

Rotenone or a related compound.

பூளைவேர்

Botanical name	Aerva lanata
Family	Amarantheceae
English name	Common-wayside-weed
Synonyms	Sirukanpeelai
Parts used	Root

Organoleptic Characters

Taste	Kaippu (bitter)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Diuretic Siruneerperukki
Anti-inflammatory, Demulcent
Mild analgesic

Therapeutic effects

பாண்டுபெரும் பாடு பகர்மூத்தி ரக்கிரிச்சம்
பூண்டதிரி தோடமிவை போகுங்காண் - தாண்டிப்
பறியவே ளைத்துரத்தும் பார்வையின்கண் மாதே
சிறியபீளைக்குச் சிதைந்து.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 686)

Phytochemicals:

Alpha-amyrin, campesterol, beta- sitosterol, palmitate, aervine, aervoside, methylaervin.

குக்கில்

Botanical name	Shorea robusta
Family	Dipterocarpaceae
English name	Sal tree
Synonyms	Kungilium
Parts used	Gum-resin

Organoleptic Characters

Taste	Kaippu (bitter)
Potence	Veppam (Heat)
Pirivu	Kaarppu (Pungent)

Therapeutic Actions

Stimulant - Veppamundakki
Diuretic - Siruneerperukki
Anodyne, Tonic, Astringent, Styptic

Therapeutic effects

காததர நாசிநோய் கட்டிகடி மேகப் புண்
வாதவித்தி ரஞ்சூலை வன்நகம்-ஓதிவையித்
திக்கி லிருக்கத் திடமுள்ள வோவுபயக்
குக்கி லிருக்கநமக் குள்.

- தேரையர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 349)

Phytochemicals:

White starches, protein and lipid constituents, leucoanthocyanidine, Polyphenol, hopeaphenol, asiatic acid.

இந்துப்பு

Chemical name	Sodium chloride impura
English name	Rock Salt
Synonyms	Sainthavam, Sinthooram

Organoleptic Characters

Taste	Uvarppu (Saline)
Potence	Veppam (Heat)
Pirivu	Inuppu (Sweet)

Therapeutic Actions

Laxative	- Malamilakki
Diuretic	- Siruneerperukki
Carminative	- Agattuvayvagatri

Therapeutic effects

சென்னிக்கண்ணா பற்றூர் செவிகவுள்கண் டம்பகநோய்
சந்நியா சங்காசந்தாகமிரைப் - புன்னிரத்த
மூலஞ் சிலந்திநளி மூடிகநஞ் சூதை வலி
சூலஞ் சிதையுமிந்தாற்சொல்.

- குணபாடம் II & III, பக்கம் 371

Chemical constituents:

Calcium sulphate

அமுக்கராக்கிழங்கு

Botanical name	Withania somnifera
Family	Solanaceae
English name	Winter cherry
Synonyms	Amukkara
Parts used	Root (Tuber)

Organoleptic Characters		**Therapeutic Actions**	
Taste	Kaippu (bitter)	Alterative	Udal thetri
Potence	Veppam (Heat)	Deobstruent	Veekamurukki
Pirivu	Kaarppu (Pungent)	Anti-inflammatory, Nervine, Anti-stress Anti-depressant, Diuretic, Anti-oxidant	

Therapeutic effects

கொஞ்சந் துவர்ப்பாங் கொடியகயம் சூலையரி
மிஞ்சுகரப் பான்பாண்டு வெப்பதப்பு - விஞ்சி
முகவுறு தோடமும்போ மேகம்அன லுண்டாம்
அசுவகந் திக்கென் றறி.

- அகத்தியர் குணவாகடம் (குணபாடம் மூலிகை, பக்கம் 30)

Phytochemicals:

Withanine, somniferine, perinponyine. Alkaloids and withanolides, Ca, Cu, Fe, Mg, Zn, Ba, K, Na, Al, Ce, Sr, Co, Ag.

Withanolides– Anti-arthritic, Anti -depressant, Anti-stress, Cardio Productive

Cu2+, Zn 2+, Fe2+ – Anti-arthritic

Sitoindoside IX, Sitoindoside X – Anti-stress

PHYSICAL PROPERTIES OF TRIAL DRUG

Test method: APHA 21st Edition &IP Methods

Loss on drying:

Five grams of *Sarvaangavaatha Chooranam* is heated in a hot oven at 40°C to constant weight. The percentage of loss of weight was calculated.

Determination of ash value:

Weigh accurately 2-3 grams of *Sarvaangavaatha Chooranam* in tarred platinum or silica dish and incinerate at a temperature not exceeding 450°C until free from carbon, cool and weigh. Calculate the percentage of ash with reference to the air dried drug.

Acid insoluble ash:

Boil the ash for 5 minutes with 25 ml of 1: 1 dilute HCl. Collected the insoluble matter in Gooch – crucible on an ash less filter paper, wash with hot water and ignite, cool in a dessicator and weigh. Calculate the percentage of acid insoluble ash with reference to the air dried drug.

Water soluble ash:

To the Gooch crucible containing the total ash, add 25 ml of water and boil for 5 minutes. Collect the insoluble matter in a sintered glass crucible or on ash less filter paper. Wash with hot water and ignite in a crucible for 15 minutes at a temperature not exceeding 450°C. Subtract the weight of the insoluble matter from the weight of the ash; the difference of weight represents the water soluble ash. Calculate the percentage of water soluble ash with reference to the air dried drug.

Alkalinity of water soluble ash:

Five grams of *Sarvaangavaatha Chooranam* converted to ash, boiled with water, filtered. Filtrate was titrated against 0.1N of HCl using phenolphthalein as an indicator.

Alkalinity of water soluble ash = X x of acid / 0.1 x W

X = Titre value.

W = Weight of the material taken.

Alkalinity is given as ml of 0.1N of HCl equated to 1 gm.

pH:

Five grams of *Sarvaangavaatha Chooranam* is weighed accurately and placed in clear 100 ml beaker. Then 50 ml of distilled water is added and dissolved well. Wait for 30 minutes and then apply in to $_{P}$H meter at standard buffer solution of 4.0, 7.0, and 9.2.

Qualitative analysis of Acidic/Basic radicals and phytochemical constituents in trial drug

Procedure	Observation	Inference
Test for Calcium: 2 ml of extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxide solution.	White precipitate is formed	Presence of calcium
Test for Sulphate: 2 ml of the extract is added to 5 % barium chloride solution.	White precipitate is formed	Presence of sulphate
Test for Chloride : The extract is treated with Silver nitrate solution	White precipitate is formed	Presence of Chloride
Test for Carbonate : The substance is treated with Conc. HCl.	No effervescence is formed	Absence of carbonate
Test for Starch : The extract is added with weak iodine solution	Blue colour is formed	Presence of starch
Test for Iron (Ferric) : The extract is treated with glacial acetic acid and potassium ferrocyanide	No blue colour is formed	Absence of Ferric iron

Test for Iron (Ferrous) : The extract is treated with Conc. HNO_3 and ammonium thiocynate	Blood red colour is formed	Presence of Ferrous iron
Test for Phosphate : The extract is treated with ammonium molybdate and conc. HNO_3	Yellow precipitate is formed	Presence of phosphate
Test for Tannic acid : The extract is treated with Ferric chloride	Blue black precipitate is formed	Presence of Tannic acid
Test for Unsaturation: 1 ml of Potassium permanganate solution is added to the extract.	Does not get decolourised	Absence of unsaturated compound
Test for Saponins: Dilute extract+ 1ml of distilled water shake well.	No froth formation	Absence of saponins
Test for Sugars : **Benedict method**: 5ml of Benedict solution heated gently then add 8 drops of diluted extract then heated in a boiling water bath. **Molisch test**: Dilute extract+2 drops of Molisch+3ml conc.H_2SO_4.	Colour change No Reddish violet zones appeared	Indicates the presence of sugar Absence of carbohydrate
Test for Steroids: **Liberman Burchard test:** Dilute extract +2 ml acetic anhydride+ conc.H_2SO_4.	No Formation of red colour	Absence of steroids
Test for Amino acids: Dilute extract +2ml of Ninhydrin's soln.	Formation of violet colour	Presence of amino acids

Test for Proteins: **Biuret method:** 1ml of dilute extract + 1ml of 5% $CuSO_4$ + 1% NaOH.	Formation of Violet colour	Presence of proteins
Test for FlavaNoids: Dilute extract+ mg bits+2drops of conc.HCl and gently heated.	No formation of pink colour	Absence of flavaNoids
Test for Phenol: Dilute extract+2drops of $FeCl_3$ soln.	Deep green colour is formed	Presence of phenols
Test for Tannins: Dilute extract +2ml of 10%lead acetate add.	White precipitate formed	Presence of tannins
Test for Alkaloids: **Mayer's method:** 1ml of dilute extract + 1ml reagent. **Dragendroff's method:** 1ml of dilute extract+ 1ml of reagent.	Appearance of cream colour precipitate Appearance of orange colour precipitate	Presence of alkaloids Presence of alkaloids
Test for Cardiac Glycosides (Keller Killani test): 5 ml of each extracts was treated with 2ml of glacial acetic acid containing one drop of ferric chloride solution. This way underplayed with 1 ml of concentrated sulphuric acid	A brown ring formed and a violet ring formed below the brown ring.	Presence of cardiac glycosides
Test for TerpeNoids (Salrowski test): 5 ml of each extracts was mixed in 2ml of chloroform and concentrated H2SO4 (3ml) was carefully added to form a layer.	Reddish brown colour is formed.	Presence of terpeNoids

Pre clinical pharmacological & Toxicological studies of Sarvaangavaatha Chooranam for Analgesic, Anti-inflammatory, Anti-pyretic effects in rats

1.0 MATERIALS AND METHODS

1.1 Test Drug

The following medicinal plants were used in the study were collected and processed by the methods prescribed in standard text books of Siddha Medicine.

1.1 Sarvaangavaatha Chooranam (SVC)

SVC was prepared by the method described in (Kannusamy Vaithya Chinthaamani – (Chikitcha Rathnadeepam, Part II), pg no : 164)

1.2 Preparation of drug for dosing

All drugs used for the study was suspended each time with 1% (w/v) solution of sodium carboxy methyl cellulose before administration.

1.3 Drugs and chemicals

Alloxan monohydrate and fine chemicals used in these experiments were obtained from Sigma Chemicals company, U.S.A. Other analytical grade chemicals were obtained from S.d. Fine Chemicals Ltd., Mumbai.

1.4 Experimental animals

Colony inbred animals strains of wistar rats of either sex weighing 200 - 250 g were used for the pharmacological and toxicological studies. The animals were kept under standard conditions 12:12 (day/night cycles) at 22^0C room temperature, in polypropylene cages. The animals were fed on standard pelleted diet (Hindustan Lever Pvt Ltd., Bangalore) and tap water *ad libitum*. The animals were housed for one week in polypropylene cages prior to the experiments to acclimatize to laboratory conditions. The experimental protocol was approved by the Institutional Animal Ethical Committee (IAEC).

1.5 Acute oral toxicity study

Acute oral toxicity was conducted as per the OECD guidelines (Organization of Economic Cooperation and Development) 423 (Acute Toxic Class Method). The acute toxic class method is a stepwise procedure with 3 animals of a single sex per step. Depending on the mortality and /or moribund status of the animals, on the average 2-4 steps may be necessary to allow judgment on the acute toxicity of the test substance. This procedure results in the use of a minimal number of animals while allowing for acceptable data based scientific conclusion.

The method uses defined doses (5, 50, 300, 2000 mg/kg body weight) and the results allow a substance to be ranked and classified according to the Globally Harmonized System (GHS) for the classification of chemicals which cause acute toxicity

Wistar albino rats of either sex weighing 200-250 g were fasted overnight, but allowed water *ad libitum*. Since the formulation is relatively non toxic in clinical practice the highest dose of 2000 mg/kg/p.o (as per OECD guidelines "Unclassified") was used in the acute toxicity study.

The animals were observed closely for behavioural toxicity, if any by using FOB (Functional observation battery).

1.6 Repeated oral toxicity study

Repeated oral toxicity studies can be used to get additional information regarding the toxicity profile of a chemical. Repeated oral toxicity studies are defined as those studies where the chemical is administered to the animal for a period covering approximately 10% of the expected life of the animal. Usually, the dose levels are lower than for acute studies and allow chemicals to accumulate in the body before lethality occurs, if the chemical possess this ability.

Experimental procedure

The following experimental procedure was followed to evaluate the repeated oral toxicity study of Sarvaanga Vatha Chooranam (SVC)

Group I: Control animals received 1% Tween 20, 2 ml/kg/p.o. for 21 days

Group II: Aqueous extract of SVC at the dose Level of 500 mg/kg/p.o. for 21 days

Body weight, food intake and water intake was recorded at two intervals with simultaneous observation for toxic manifestation and mortality, if any. At the end of 21 days treatment all the animals were sacrificed by over dosage of ether anaesthesia. Blood was collected and used for haematological studies. Section of liver, kidney, and heart were dissected out and kept in 10% formalin for histopathological studies.

1.7 Biochemical studies

Estimation of glucose

Glucose was estimated using commercial Glucose estimation kit (Span Diagnostics) by the method of Barham *et al.*, (1972) and Tenscher. *et al.*, (1971).

Aspartate aminotransferase (AST)

Aspartate aminotransferase was estimated using commercial AST kit (Span Diagnostics) by the method of Reitman and Frankel (1957).

Alanine aminotransferase (ALT)

Alanine aminotransferase was estimated using commercial AST kit (Span Diagnostics) by the method of Reitman and Frankel (1957).

Alkaline phosphatase (ALP)

Alkaline phosphatase was assayed using commercial ALP kit (Span Diagnostics) by the method of King (1934).

Urea

Urea was assayed using the commercial kit (Span Diagnostics) by the method of Coulambe *et al*., (1965).

1.8 Haematological studies

Erythrocyte count

Erythocyte count was estimated by Hemocytometer method of Ghai (1995).

Total Leukocyte Count (WBC)

Total Leukocyte Count was estimated by Hemocytometer method of John (1972).

Haemoglobin

Haemoglobin was estimated by method of Ghai (1995).

1.9 Histopathological studies

Animals were sacrificed at the end of repeated oral toxicity and tissues were processed for histopathological studies.

1.10 Analgesic, Anti-inflammatory, Anti-pyretic studies

Analgesic activity

Hot plate test

The test was performed using Eddy's hot plate maintained at a temperature of 55 ± 1°C. The basal reaction time of all animals was recorded. The animals which showed fore paw licking or jumping response within 6-8 secs were selected for the study. 60 min after the administration of test and reference compounds, the animals in all the six groups were individually exposed to the hot plate maintained at 55°C. The time taken in secs for fore paw licking or jumping was taken as reaction time. A cut off period of 15 secs is observed to avoid damage to the paws. Analgesic activity was recorded at hourly intervals of 2 hours after drug administration.

Anti-pyretic activity

Rats selected for the study were fasted overnight allowing water *ad libitum*. Initial rectal temperature was recorded using Hick's clinical thermometer. Pyrexia was induced by subcutaneous injection of TAB vaccine 1 ml/kg body weight. Six hrs later pyrexia was assessed and those animals that did not show a minimum rise of 1.5^{o}C were rejected. The animals thus found fit for the study were divided into 6 groups as described above and drugs were administered. Pyrexia was recorded at hourly intervals for 3 hrs after drug administration.

Anti-inflammatory activity

Anti-inflammatory activity of SVC was evaluated in both acute and chronic models of inflammation.

Acute model

a. Carrageenan induced hind paw edema

The carrageenan assay procedure was carried out according to the method of Wintar *et al.* (1962). Edema was induced by injecting 0.1 ml of a 1% solution of carrageenan in saline into the plantar aponeurosis of the left hind paw of the rats. The extracts, reference drug and the control vehicle (distilled water) were administered 60 min prior to the injection of the carrageenan. The volumes of edema of the injected and contra lateral paws were measured at +1, 3 and 5 hrs after induction of inflammation using a plethysmometer (Bhatt *et al*., 1977) and percentage of anti-inflammatory activity was calculated.

Chronic model

b. Cotton pellet granuloma

Sterile cotton pellets (weighing 10 ± 2 mg) were implanted subcutaneously along the flanks of axillae and groins of wistar albino rats (Swingle and Shideman *et al*., 1972). The extracts, reference drug and the control vehicle (distilled water) were administered as per protocol to rats everyday for a period of 7 days. On day + 8 the rats were sacrificed by cervical decapitation and cotton pellets were removed surgically, freed from extraneous tissue and weighed immediately for wet weight. One half of the pellets were dried in an incubator at 60ºC until a constant weight was obtained.\

1.11 In Vivo Anti-oxidant study

Samples of serum collected from rats treated with test drugs were assayed for GSH (Moron *et al*, 1979) and LPO (Yagi, 1976) and the results were compared with control group.

2.0 RESULTS

2.1 Preliminary basic, acidic radicals and phytochemical studies

The qualitative chemical analysis and acidic, basic radicals assay of the drugs showed the presence of phytoconstituents and minerals as depicted in (Table 1).

2.2 Acute oral toxicity study

SVC at the dose of 2000mg/kg/po did not exhibit any mortality in rats. As per OECD 423 guidelines the dose is said to be “Unclassified” under the toxicity scale. Hence further study with higher doses was not executed.

2.3 Repeated oral toxicity for 21 days

Test drug SVC at the dose of 500 mg/kg/po when administered orally for 21 days in rats did not show toxicity in renal and Haematological parameters (Table 2). However Biochemical studies showed alterations in liver functions tests as evidenced by altered levels of AST, ALT and ALP. The drug administration for 21 days did not alter the physiological levels of glucose and cholesterol in serum (Table 3).

2.4 Histopathological study

SVC at the dose of 500 mg/kg/po daily administered for 21 days did not show evidence of pathological lesions in the tissues tested (Plate 1).

2.5 Analgesic, Anti-inflammatory and Anti-pyretic studies

SVC at the dose of 500 mg/kg/p.o showed significant analgesic and Anti-pyretic activity in rats (Table 7 & 8). SVC also exhibited significant anti-inflammatory activity in both acute and chronic inflammatory conditions in rats. The result of SVC (500 mg/kg/p.o) can be compared to that of Diclofenac sodium (5 mg/kg/p.o) (Table 4 & 5).

2.6 Anti-oxidant activity

At the end of 21 days repeated oral toxicity study when the plasma of drug treated animals was examined for GSH activity, the level of GSH activity was increased significantly ($p>0.001$) in test groups. On the other hand the LPO activity was considerably reduced in drug treated group when compared to control (Table 6).

3.0 DISCUSSION

The Siddha formulation SVC was evaluated for its Pharmacological and Toxicological profiles in experimental rats. The preliminary phyto chemical screening of SVC showed the presence of Phyto constituents like tannic acid, alkaloids, tannins, phenols, glycosides, terpeNoids, amino acids and sugar. The test drug also answered for Ca^{++}, Fe^{++}, sulphate, chloride and phosphate.

The test drug did not exhibit mortality at the dose of 2000 mg/kg/p.o. According to OECD 423, drugs do not show mortality at 2000 mg/kg and above are "Unclassified" under the toxicity scale. Hence further studies with higher doses were not attempted.

In repeated oral toxicity study (500 mg/kg/p.o) for 21 days animals treated with SVC did not exhibit any significant changes in Hb%, RBC, blood sugar, cholesterol, body weight, food and water intake and behavioural parameters when compared to control animals. However SVC at the dose of 500 mg/kg/p.o did significantly alter the Liver marker enzyme status when compared to control animals. However no significant change in the Marker enzyme level of kidney was found in animals treated with SVC for 21 days. Incidentally, there was no change in the architecture of liver observed in rats treated with SVC for 21 days.

SVC exhibited significant analgesic, Anti-pyretic and anti-inflammatory activity in both acute and chronic models of inflammation in rats. In cotton pellet granuloma method SVC showed anti-inflammatory activity at the dose of 500 mg/kg/p.o and the anti-inflammatory activity of SVC was comparable to that of Diclofenac sodium 5 mg/kg/p.o. SVC at the dose of 500 mg/kg/p.o exhibited significant reduction in the edema volume of paw injected with carageenan at 30, 60, 120 and 240 mts, with maximum activity at the end of 240 mts. In this model also SVC exhibited an anti-inflammatory activity comparable to that of Diclofenac sodium (5 mg/kg/p.o). From this study it can be reasonably assumed that SVC exhibits its anti-inflammatory activity due to a mechanism by inhibiting the cyclooxygenase pathway similar to that of Diclofenac sodium.

The reverse pharmacological studies of SVC have got good correlation with clinical study report presented in this thesis. The present study also shows the safety profile of the drug in repeated dosing for 21 days, except in the liver function tests. Since there is no significant pathological changes of normal architecture of liver treated with SVC for 21 days, the altered levels of ALT, AST, ALP may be attributed to some other unknown factors (eg. Pesticide residue in raw materials used etc) which are to be probed. However oral drug treatment for 21 days did not exhibit any alteration in the biomarkers of kidney. The clinical study findings with this drug did not mention anything on the abnormal liver function tests the elevation of marker enzyme levels in experimental rats may be attributed to species difference for its toxicological activities. The formulation exhibited significant Anti-oxidant and inhibition of LPO in rats treated for 21 days.

Table 2

Effect of Siddha Formulations (SVC) on Haematological parameters after 21 days repeated oral dosing (500 mg/kg)

Groups	Hb (gm/100ml)	RBC (millions/cu.mm)
Control	14.45±0.4113	5.20±0.047
Test	15.17±0.5164 ^{ns}	5.067±0.033^{ns}

N=6; Values are expressed as mean ± S.D followed by

Students Paired 'T' Test

ns – non significant when compared to control groups

Table 3

Effect of Siddha formulation (SVC) on Biochemical markers of liver and kidney after 21 days repeated oral dosing (500 mg/kg/po) in rats

Groups	ALP (K.A.Units)	AST (IU/L) SGOT	ALT (IU/L) SGPT	Urea (mg/100ml)	BUN (mg/ 100ml)	Glucose mg/dl	Cholesterol mg/dl
Control	2.973±0.3929	79.89±1.906	25.48±2.93	16.38±2.12	7.52±0.84	83.57±6.97	53.75±6.90
Test	3.850±0.2074 ***	162.3±5.164 ***	14.75±0.88 ***	16.93±0.79 ns	7.92±0.37 ns	89.57±12.72	63.18±4.65

N=6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test

*** P<0.001 as compared with that of control.

ns – non significant when compared to control groups

Table 4

Anti-inflammatory activity of (SVC) in Cotton Pellet Granuloma

Groups	Cotton pellet Granuloma method
	Dry Weight (mg)
Control	115.87 ± 15.42
Test	76.88 ± 10.38**
Standard (Dic.Sodium 5 mg/kg/po)	70.00 ± 7.42**

n=6; Values are expressed as mean ± S.D followed by One Way Anova using Dunnett's Test

** P<0.01 as compared with that of control.

Table 5

Anti-inflammatory activity of (SVC) in Carrageenan induced hind paw edema in rats

Groups	Paw volume (ml) by Mercury Displacement at Regular interval of Time				
	0min	**30min**	**60min**	**120min**	**240min**
Test	0.928±0.045	1.36±0.204	1.355±0.174	1.04±0.077	0.988±0.023
Standard (Dic.Sodium 5 mg/kg/po)	0.883 ± 0.063^{ns}	$0.996\pm0.067^{**}$	$1.02\pm0.064^{**}$	$0.926\pm0.041^{**}$	$0.896\pm0.026^{**}$

n=6; Values are expressed as mean ± S.D followed by One Way ANOVA –Dunnett's multiple comparison test.

ns - Non significant as compared with 0 mins of respective groups;

**P<0.01 as compared with control.

Table 6

Anti-oxidant activity of (SVC) after 21 days repeated oral dosing (500 mg/kg)

Groups	LPO	GSH
Control	0.95 ± 1.37	25.76 ± 0.632
SVC	$0.01 \pm 3.40^{***}$	$60.56 \pm 0.339^{***}$

N=6; Values are expressed as mean ± S.D followed by Student T- Test.

***P<0.001 as compared with control.

Table 7

Anti-pyretic activity of (SVC) using Digital Rectal Thermometer

Groups	**Rectal temperature (^{0}C)**				
	0 min	30 min	60 min	120 min	240 min
Control	35.90±1.18	37.23±1.24	38.27±0.34	37.20±1.08	36.46±0.88
Test	35.50±0.65	37.01±0.90	36.29±0.72**	35.43±0.388*	35.04±0.51*
Standard (Dic.Sodium 5 mg/kg/po)	35.80±0.97	36.96±0.95	35.87±0.65***	35.65±0.60*	35.42±0.52*

n=6, Values are expressed as mean ± S.D using Student's paired 't' test.

*P<0.05 as compared with that of control.

Table 8

Analgesic activity of (SVC) using Eddy's Hot Plate Method

Groups	**Paw licking response (Sec)**			
	0 min	30 min	60 min	120 min
Control	7.76±0.96	7.93±0.96	7.86±0.67	8.26±0.53
Test	7.86±1.06	7.66±1.03	10.23±1.20*	10.20±1.77ns
Standard (Dic.Sodium 5 mg/kg/po)	8.43±0.89	8.83±1.16	12.20±1.71**	14.18±1.13**

n=6, Values are expressed as mean ± S.D using one way ANOVA followed by Dunnet's method.

*P<0.05 as compared with that of control.

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AN OPEN TRIAL OF *SARVAANGAVAATHA CHOORANAM* AND *VAATHA NOII THYLUM* FOR THE TREATMENT OF *CEGANAVAATHAM* (CERVICAL SPONDYLOSIS)

FORM I – SELECTION PROFORMA

1. OP/ IP No: _____ 2. BED No: _____ 3. S. No: ☐☐

4. NAME: _____ 5. AGE (Yrs): ☐☐ 6. GENDER: M ☐ F ☐

7. DATE OF ADMISSION TO THE TRIAL ☐☐☐☐☐☐

8. OCCUPATION_____

9.POSTAL ADDRESS

_____

_____

10. COMPLAINTS & DURATION

_____

_____

_____

_____

11. HISTORY OF PRESENT ILLNESS

_____

_____

_____

_____

12. PAST HISTORY

_____

_____

13. FAMILY HISTORY _____

14. MENSTRUAL HISTORY Normal(1) ☐ Abnormal(2) ☐ Not applicable(3) ☐

_____

15. SOCIAL STATUS Low class (1) ☐ Middle class (2) ☐ Higher class (3) ☐

HABITS

	Yes(1)	No(2)
16. Smoker	☐	☐
17. Alcoholic	☐	☐
18. Betalnut ,tobacco chewer	☐	☐
19. Non-Vegetarian	☐	☐

GENERAL EXAMINATION

20. Body weight (Kg) ☐☐
21. Body Temperature (°F) ☐☐☐ . ☐
22. Blood Pressure (mmHg) ☐☐☐ / ☐☐☐
23. Pulse Rate /min ☐☐☐
24. Heart Rate / min ☐☐☐
25. Respiratory Rate /min ☐☐

	Yes(1)	No(2)
26. Pallor	☐	☐
27. Jaundice	☐	☐
28. Clubbing	☐	☐
29. Cyanosis	☐	☐
30. Pedal Oedema	☐	☐
31. Lymphadenopathy	☐	☐
32. Jugular venous pulsation	☐	☐

SYSTEMIC EXAMINATION

A) INSPECTION

33. Attitude **Normal (1)** ☐ **Affected(2)** ☐ _____

	Present(1)	Absent(2)	
34. Muscular spasm	☐	☐	_____
35. Wasting of the upper limbs	☐	☐	_____
36. Gait	☐	☐	_____

B) PALPATION

	Present(1)	Absent(2)	
37. Tenderness	☐	☐	_____
38. Muscle spasm	☐	☐	_____
39. Wasting	☐	☐	_____

C) MOVEMENTS

	Present(1)	Absent(2)	
40. Pain	☐	☐	_____
41. Restriction	☐	☐	_____

Movements of head	Pain		Muscular spasm		ROM*	
	Yes(1)	No(2)	Yes(1)	No(2)	**Normal(1)**	**Reduced(2)**
42. Rotation (Atlando–axial jt, C1-C2)	☐	☐	☐	☐	☐	☐
43. Flexion	☐	☐	☐	☐	☐	☐
44. Extension	☐	☐	☐	☐	☐	☐
45. Lateral bending (dorsal cervical region)	☐	☐	☐	☐	☐	☐
46. Nodding (Atlando–occipitalis)	☐	☐	☐	☐	☐	☐

(*ROM – Range Of Movement)

NEUROLOGICAL EXAMINATION

47. Muscle wasting **Present(1)** ☐ **Absent(2)** ☐ _____

48. Tone **Normal(1)** ☐ **Altered(2)** ☐ _____

Sensation	**Normal(1)**	**Diminished(2)**	
49. Anterior column	☐	☐	_____
50. Posterior column	☐	☐	_____
5I. Motor (Power)	☐	☐	_____

Autonomic Nervous System	**Normal(1)**	**Affected(2)**	
52. Bladder	☐	☐	_____
53. Bowel	☐	☐	_____

Reflexes

Deep Tendon Reflexes	**Normal(1)**	**Diminished(2)**	**Exaggerated(3)**
54. Biceps	☐	☐	☐
55. Triceps	☐	☐	☐
56. Supinator	☐	☐	☐
57. Knee jerk	☐	☐	☐
58. Ankle jerk	☐	☐	☐

Superficial Tendon Reflexes

59. Plantar **Flexion(1)** ☐ **Extention(2)** ☐

Clonus	**Present(1)**	**Absent(2)**
60. Ankle	☐	☐
61. Petallar	☐	☐

CLINICAL EXAMINATION

Pain in nape No(1) ☐ Mild(2) ☐ Moderate(3) ☐ Severe(4) ☐

62. Nature NA*(1) ☐ Diffuse(2) ☐ Local (3) ☐ Others(4) ☐

63. Onset NA*(1) ☐ Gradual (2) ☐ Sudden(3) ☐ (* NA- Not Applicable)

	Yes(1)	No(2)
64. Aggravating factor - Activity	☐	☐
65. Relieving factor - Rest	☐	☐
Pain in upper limb(s)	☐	☐

66. Right ☐ 67.Left ☐ 68.Both ☐

69. Nature NA*(1) ☐ Shooting (2) ☐ Burning (3) ☐ Others(4) ☐

	Yes(1)	No(2)
70. Tenderness	☐	☐
71. Numbness	☐	☐
72.Giddiness	☐	☐
73. Headache	☐	☐
74. Stiffness	☐	☐
75. Muscular wasting of the upper limbs	☐	☐
76. Constipation	☐	☐
77. Feeling of heaviness of the body	☐	☐
78. Burning sensation of the eyes	☐	☐
79. Weakness of the upper limbs	☐	☐
80. Mental depression	☐	☐

Restricted movements 81.Neck Full(1) ☐ Partial(2) ☐ No(3) ☐

82.Upperlimb Full(1) ☐ Partial(2) ☐ No(3) ☐

EXAMINATION OF VITAL ORGANS

	Normal(1)	Abnormal(2)	
83. CNS	☐	☐	_____
84. CVS	☐	☐	_____
85. RS	☐	☐	_____
86. ABDOMEN	☐	☐	_____

SIDDHA ASPECTS

87. NILAM

Kurinji(1) ☐ Mullai(2) ☐ Marutham (3) ☐ Neithal(4) ☐ Paalai(5) ☐

88. KALA IYALBU

Kaarkaalam(1) ☐ Koothirkaalam(2) ☐ Munpanikaalam(3) ☐

Pinpanikaalam(4) ☐ IlavenirKaalam(5) ☐ Mudhuvenirkaalam(6) ☐

89. UDAL IYALBU

Vaatham(1) ☐ Pittham(2) ☐ Kabam(3) ☐

VaathaPittham(4) ☐ VaathaKabam(5) ☐ PitthaVaatham(6) ☐

PitthaKabam(7) ☐ KabaVaatham(8) ☐ KabaPittham(9) ☐

90. GUNAM

Sathuvam(1) ☐ Raasatham(2) ☐ Thamo gunam(3) ☐

AYMPORIGAL

	Normal(1)	**Affected(2)**	
91. Mei	☐	☐	_____
92. Vaai	☐	☐	_____
93. Kan	☐	☐	_____
94. Mookku	☐	☐	_____
95. Sevi	☐	☐	_____

KANMENDHIRIUM / KANMAVIDAYAM

	Normal(1)	**Affected(2)**	
96. Kai	☐	☐	_____
97. Kaal	☐	☐	_____
98. Vaai	☐	☐	_____
99. Eruvaai	☐	☐	_____
100. Karuvaai	☐	☐	_____

UYIR THAATHUKKAL

VAATHAM

	Normal(1)	**Affected(2)**	
101.Praanan	☐	☐	_____
102.Abaanan	☐	☐	_____
103.Viyaanan	☐	☐	_____

104.Uthaanan ☐ ☐ _____

105.Samaanan ☐ ☐ _____

106.Naagan ☐ ☐ _____

107.Koorman ☐ ☐ _____

108.Kirukaran ☐ ☐ _____

109.Devathathan ☐ ☐ _____

110.Dhananjeyan ☐ ☐ _____

PITTHAM

Normal(1) Affected(2)

111.Anar Pittham ☐ ☐ _____

112.Ranjagam ☐ ☐ _____

113.Saathagam ☐ ☐ _____

114.Aalosagam ☐ ☐ _____

115.Praasagam ☐ ☐ _____

KABAM

Normal(1) Affected(2)

116.Avalambagam ☐ ☐ _____

117.Kiletham ☐ ☐ _____

118.Bothagam ☐ ☐ _____

119.Dharpagam ☐ ☐ _____

120.Santhigam ☐ ☐ _____

UDAL THAATHUKKAL

Normal(1) Affected(2)

121.Saaram ☐ ☐ _____

122.Senneer ☐ ☐ _____

123.Oon ☐ ☐ _____

124.Kozhuppu ☐ ☐. _____

125.Enbu ☐ ☐ _____

126.Moolai ☐ ☐ _____

127.Sukkilam / Suronitham ☐ ☐ _____

ENVAGAI THERVUGAL

128.**Naadi** Vaatham(1) ☐ Pittham(2) ☐ Kabam(3) ☐

VaathaPittham(4) ☐ VaathaKabam(5) ☐ PitthaVaatham(6) ☐

PitthaKabam(7) ☐ KabaVaatham(8) ☐ Kaba Pittham(9) ☐

Normal(1) Affected(2)

129. Sparisam ☐ ☐ _____

130. Naa ☐ ☐ _____

131. Niram ☐ ☐ _____

132..Mozhi ☐ ☐ _____

133. Vizhi ☐ ☐ _____

MALAM

Normal(1) Affected(2)

134. Niram ☐ ☐ _____

Yes(1) No(2)

135. Nurai ☐ ☐ _____

136. Kirumi ☐ ☐ _____

137. Kalappu ☐ ☐ _____

138. Erugal ☐ ☐ _____

139. Elagal ☐ ☐ _____

MOOTHIRAM

Neerkuri

Normal(1) Affected(2)

140. Niram ☐ ☐ _____

141. Manam ☐ ☐ _____

142. Edai ☐ ☐ _____

143. Nurai ☐ ☐ _____

144. Enjal ☐ ☐ _____

145. **Neikkuri** Vaatha neer(1) ☐ Pittha neer (2) ☐ Kaba neer(3) ☐

_____

LAB INVESTIGATIONS

BLOOD

146.TC (Cells/Cumm)- ☐☐☐☐

DC (%) 147.N- ☐☐ 148.L- ☐☐

149. M- ☐☐ 150.E- ☐☐ 151.B- ☐☐

ESR (mm) 152.½ hr- ☐☐ 153.1 hr- ☐☐

154. Hb (gm%) ☐☐ . ☐

Blood Sugar (mg%)

155. Fasting ☐☐☐ . ☐ 156.Post Prandial ☐☐☐ . ☐

157. Random ☐☐☐ . ☐

158. Blood Urea (mg%) ☐☐ . ☐

159. Blood Cholesterol (mg%) ☐☐☐ . ☐

URINE

160. Albumin 0.Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

161. Sugar 0.Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

Deposit

	Present(1)	**Absent(2)**	
162. Pus cells	☐	☐	_____
163. Epithelial cells	☐	☐	_____
164. Red blood cells	☐	☐	_____
165. Casts/Crystal	☐	☐	_____

MOTION

	Present(1)	**Absent(2)**	
166. Ova	☐	☐	_____
167. Cyst	☐	☐	_____
168. Occult blood	☐	☐	_____
169. Pus cells	☐	☐	_____

170. X- RAY CERVICAL SPINE

INCLUSION CRITERIA

	Yes(1)	No(2)
171. Ceganavaatham patient.	☐	☐
172. Age between 25 years to 60 years.	☐	☐
173. Willing to be admitted as In-patient in our ward for minimum 30 days and continue the remaining treatment in OPD or willing to attend OPD once in 8 days for 48 days.	☐	☐
174. Willing to undergo radiological investigation before and after treatment.	☐	☐
175. Willing to give blood specimen before and after treatment.	☐	☐

EXCLUSION CRITERIA

	Yes(1)	No(2)	NA*
176. Any history of trauma	☐	☐	
177. Hypertension	☐	☐	
178. Cardiac disease	☐	☐	
179. Use of intravenous (or) oral narcotic drugs	☐	☐	
180. Any other serious illness	☐	☐	
181. Pregnancy	☐	☐	☐
182. Lactation	☐	☐	☐

(* NA- Not Applicable)

183. Admitted to trial Yes(1) ☐ No(2) ☐

184. If yes, S.No ☐☐ 185. IP ☐ OP ☐

186. Date of purgation ☐☐☐☐☐☐

Drugs issued for O.P. Patients

187. No. of packs _____

188. Volume of Thylum _____ ml

189. Date _____

190. Station _____

191. Signature of Doctor

192. Signature of H.O.D.

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AN OPEN TRIAL OF *SARVAANGAVAATHA CHOORANAM* AND
VAATHA NOII THYLUM* FOR THE TREATMENT OF *CEGANAVAATHAM
(CERVICAL SPONDYLOSIS)
FORM – II ASSESSMENT FORM

1. OP/IP No _____ 2. BED No _____ 3. S.No ☐☐

4. NAME _____

5. DATE OF ADMISSION TO THE TRIAL ☐☐☐☐☐☐

6. DATE OF ASSESSMENT ☐☐☐☐☐☐

7. DAY OF ASSESSMENT ☐☐

CLINICAL ASSESSMENT CHART

	Relieved(1)	Diminished(2)	Persistent(3)	Aggravated(4)	NA*(5)
8.Pain in nape	☐	☐	☐	☐	☐
Pain in upper limb(s)	☐	☐	☐	☐	☐
9.Right ☐ 10.Left ☐ 11.Both ☐					
12. Tenderness	☐	☐	☐	☐	☐
13. Numbness	☐	☐	☐	☐	☐
14. Giddiness	☐	☐	☐	☐	☐
15. Headache	☐	☐	☐	☐	☐
16. Stiffness	☐	☐	☐	☐	☐
17. Muscular wasting of the upper limbs	☐	☐	☐	☐	☐
18. Constipation	☐	☐	☐	☐	☐
19. Feeling of heaviness of the body	☐	☐	☐	☐	☐
20. Burning sensation of the eyes	☐	☐	☐	☐	☐
21. Weakness of the upper limbs	☐	☐	☐	☐	☐
22. Mental depression	☐	☐	☐	☐	☐
Restricted movements 23.Neck	☐	☐	☐	☐	☐
24.Upper limb	☐	☐	☐	☐	☐

(* NA- Not Applicable)

25. Naadi _____

26. Neerkuri _____

27. Neikkuri Vaatha neer(1) ☐ Pittha neer (2) ☐ Kaba neer(3) ☐

_____

LAB INVESTIGATIONS (ONLY ON DAY 48)

BLOOD

28.TC (Cells/Cumm)- ☐☐☐☐

DC (%) 29.N- ☐☐ 30.L- ☐☐

31. M- ☐☐ 32.E- ☐☐ 33.B- ☐☐

ESR (mm) 34. ½ hr- ☐☐ 35. 1 hr- ☐☐

36. Hb (gm%) ☐☐ . ☐

Blood Sugar (mg%)

37. Fasting ☐☐☐ . ☐ 38. Post Prandial ☐☐☐ . ☐

39. Random ☐☐☐ . ☐

40. Blood Urea (mg%) ☐☐ . ☐

41. Blood Cholesterol (mg%) ☐☐☐ . ☐

URINE

42. Albumin 0.Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

43. Sugar 0.Nil ☐ 1. + ☐ 2. + + ☐ 3. + + + ☐

Deposit

	Present(1)	**Absent(2)**	
44. Pus cells	☐	☐	_____
45. Epithelial cells	☐	☐	_____
46. Red blood cells	☐	☐	_____
47. Casts/Crystal	☐	☐	_____

MOTION

	Present(1)	**Absent(2)**	
48. Ova	☐	☐	_____
49. Cyst	☐	☐	_____
50. Occult blood	☐	☐	_____
51. Pus cells	☐	☐	_____

52. X- RAY CERVICAL SPINE

FOR OP PATIENTS

Drugs issued

53. No. of packs _____

54. Volume of thylum _____ ml

Drugs returned

55. No of packs _____

56. Volume of thylum _____ ml

57. **RESULT** Cured(1)☐ Improved(2) ☐ No change(3) ☐

58. Date _____

59. Station _____

60. Signature of doctor

61. Signature of H.O.D.

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AN OPEN TRIAL OF *SARVAANGAVAATHA CHOORANAM* AND *VAATHA NOII THYLUM* FOR THE TREATMENT OF *CEGANAVAATHAM (CERVICAL SPONDYLOSIS)*

CONSENT FORM

CERTIFICATE BY INVESTIGATOR

I certify that I have disclosed all details about the study in the terms readily understood by the patient.

Date …….. Signature …….

Name ……

CONSENT BY PATIENT

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of ***Sarvaangavaatha chooranam*** and ***Vaatha Noii thylum*** for the management of ***Ceganavaatham*** (*cervical spondylosis*).

Date …….. Signature ……

Name ……..

Date ……. Signature of Witness ……..

Name ……..

Relationship……....

BIBILIOGRAPHY

- A.K.Nadkarni, The Indian Materia Medica, Bombay Popular Prakashan, Bombay, Second Print- 3rd Edition, 1982; Vol I, II
- Azima chatterjee, S.Satyesh chandrapakrashi, The treatise on Indian medicinal plants, NISCAIR, 2003; Vol III, IV, VI
- B.D.Chaurasia, Text Book of Anatomy, 4th Edition, CBS Publisher's & Distributors, 204-206.
- C.J.Romanes, Cunningham's Manual of Practical Anatomy, Oxford Medical Publications, Vol III, 15th edition, 2003; 1-3
- C.Kannusami Pillai, Kannusamy Vaithya Chinthaamani (Chikitsha Rathna Dheebam Part-II), Thirumagal Pathippagam, 1983; 61, 164.
- C.Kannusami Pillai, Pathartha Guna vilakkam- Moola Varkkam, B.Rathina Nayakkar & Sons, 1990; 89, 127, 236, 637.
- C.Kannusami Pillai, Pathartha Guna vilakkam- Thathu Jeeva Varkkam, B.Rathina Nayakkar & Sons, 1991; 7, 17, 20,22.
- C.P.Khare, Encyclopedia of Indian Medicinal Plants, Springer
- C.P.Samy, Agasthiyar Gunavagadam, Malaiappasamy Vaithiyasalai, Palani,
- G.S.Kulkarni, Text Book of Orthopedics & Trauma, Jaypee Brothers Medical Publishers (P) Ltd, 1st Edition-1999; Vol- III, 2632 - 2638
- Harrish Johan, Ancient Indian Massage.
- Indian herbal pharmacopoeia, Indian drug manufacturers association, Mumbai, 2002; 158, 408, 473.
- P.K.Warrier *et al*, Indian medicinal plants a compendium of 500 species, Orient Longman private Ltd, 2003; Vol I , II ,III , V
- John Crawford Adams, David L.Hamblen, Outline of Orthopaedics, Churchil Livingstone Harcourt publishers Ltd, 13th Edition, 2001; 159, 160
- J.F.Caius, The medicinal and poisonous plants of India, Scientific publishers, Jodhpur, 2003; 181.
- K.S.Murugesa Mudaliyar, Gunapadam Part-1 (Medicinal Plants Division), Directorate of Indian Medicine & Homeopathy, 6th Edition -2002;

- K.S.Uthamarayan, Siddha Maruthuvanga Churukkam, Directorate of Indian Medicine & Homeopathy, 3rd Edition -2003; 510, 690.
- K.S.Uthamarayan, Thotrakirama Aaraaitchiyum Siddha Maruthuva Varalarum, Directorate of Indian Medicine & Homeopathy, 3rd Edition -2003.
- Kanthasamy Mudaliyar, Athmaratchamirtham Ennum Vaithya Sarasangiragam, 2nd Edition, Pazhani Thandayuthapani Swamy Thirukkovil Siddha Maruthuva Nool Veliyeetu Kuzhu, 1975; 368.
- Kanthasamy Mudaliyar, Vaithya Malai Agarathi, B.Rathina Nayakkar & Sons, 1990;31.
- Kanthasamy Mudaliyar, Vaithya Mooligai Agarathi, B.Rathina Nayakkar & Sons, 1990; 156, 157.
- Kasper *et al*, Principles of Indian Medicine- Harrison, Mc Graw-Hill Medical Publishing Division, 16th Edition, Vol I , 102
- Kritikar & Basu, The Indian Medicinal Plants, NISCAIR, 2nd Edition, 2003; Vol I, II, III, IV
- K.S.Uthamarayan, Siddhar Aruvai Maruthuvam, Directorate of Indian Medicine & Homeopathy, 3rd Edition, 1999; 30
- Lawrence M.Jierney, CMDT-2005, Mc Graw-Hill Medical Publishing Division, 44th Edition, 790.
- M.Sanmugavelu, Siddha Maruthuva Noi Nadal, Noi Muthal Nadal Thirattu, part-I, Directorate of Indian Medicine & Homeopathy, 2nd edition, 1987.
- N.Kuppusamy Muthaliyar, K.S. Uthamarayan, Siddha Vaithiya Thirattu, Directorate of Indian Medicine & Homeopathy, 1st Edition, 1998.
- Owen Epstein *et al*, Clinical Examination, Mosby, 3rd Edition, 2003; 258, 259.
- P.M.Venugopal, Udal Thaththuvam, Directorate of Indian Medicine & Homeopathy, 3rd Edition, 1993.
- Ponnaiya Pillai, Pararaasasegaram -Vaatha Roga Chikitchai.
- R.Alagappan, Manual of Practical Medicine, Jaypee brothers medical publishers, 2nd Edition, 2002; 409.
- R.D.Chaudhri, Herbal Drugs Industry, Eastern publishers, 1st edition, 2004
- R.M.Natarajan, Text Book of Orthopaedics & Traumatology, M.N.Orthopaedic Hospital, 4th Edition – 2000; 133, 135.

- Ronald Mc Rae, Clinical Orthopaedic Examination, Churchil Livingstone Elsevier Science Ltd, 5th edition, 2004; 34, 38, 39, 40
- R.Thiyagarajan, Gunapadam Part-II, III, (Thathu Jeeva Vaguppu), Directorate of Indian Medicine & Homeopathy, 4th Edition -1992; 276, 285, 324, 331.
- R.Thiyagarajan, Siddha Maruthuvam Sirappu, Directorate of Indian Medicine & Homeopathy, 2nd Edition-1995; 162, 166.
- R.Thiyagarajan, Theyraiyar Venba, Anbuselvi Printers, 1st Edition-1974; 449.
- Ramp.Rastogi, Compendium of Indian medicinal plants, Central Drug Research Institute Lucknow and NISCAIR, New Delhi, Vol III, 1984; 204, 609.
- S.Chirambarathanu pillai, Siddha System of Pulse Reading, Siddha Medical Literature Research Centre, 1st edition.
- S.Chirambarathanu pillai, Vaatha Noii Maruthuvam, Siddha Medical Literature Research Centre, 1st Edition, 2005; 88, 89.
- S.P.Ramachandran, Agasthiyar Kanma Kandam-300, Thamarai Noolagam, 1st Edition-June 1995; 23.
- S.Prema, G.Victor raja, Siddha Medicine, Tamil university- Thanjavur, 235-240.
- Susan Standring, Gray's Anatomy, Elsevier Churchill Livingstone, 39th Edition.
- T.V.Sambasivam Pillai, Introduction to Siddha Medicine, Directorate of Indian Medicine & Homeopathy, 1st edition, 1993.
- T.V.Sambasivam Pillai, Tamil-English dictionary, vol-III,IV,V
- The Wealth of India, First Supplement Series, Volume I, II, III, IV,V,VII,VIII,IX
- U.N.Panda, Text Book of Medicine, CBS Publisher's & Distributors, 1st Edition- 2000; 758, 759.
- Yugivaithiya Chinthamani, Directorate of Indian Medicine & Homeopathy, 2nd edition - 2005; 76, 78, 82, 83, 86, 87, 94, 95.
- Barham D and Trinder, P.Analyst 1972:97:142.
- Coulambe G.G and Favrean L.A.Clin.Chem., 1965; 11, 624.
- Ghai C.L. A Text Book Of Practical Physiology, Jaypee Brothers, India 1995; 119-202.
- John MB. Laboratory Medicine Haematology. 4th Ed. C.V. Mosby co, St.Louis, 1972; 1198-1209.

- Kanai L Mukherjee. A Text Book of Medical Laboratory Technology. A procedure manual for routine diagnostic tests. Tata McGraw Hill Publishing Company ltd. 1999; 265-276.
- King E.J and Armstrong A.R (1934), Can.Med.Ass.J., 31, 376.
- Moron M.S, Difieree J.W and Mannerwik K.B. Levels of glutathione, glutathione reductase and glutathione s- transferase activities in rat lung and liver. Biochem.Biophy Acta 1979; 582:67-68.
- Reitman S and Frankel S, Am.J.Clin.path., 1957;28, 56
- Tenscher, A and Richterich, P. Schweiz Med. Wschr.1971; 101:345 and 390.
- Yagi K. Simple fluorimetric assay for lipid peroxide in blood plasma. Biochem.Med.1976; 15:212-215.

Web sites

- http://www.infomine.ae/all_herb.htm
- info@holisticonline.com,
- PMID: 9174976 [PubMed - indexed for MEDLINE]
- http://www.nadanherbcomp.com.au/herb-s.html
- http://www.thehindu.com/thehindu/seta/2004/05/27/stories/2004052700151700.htm
- www.hindunet.org/hindu_history/sarasvati/dictionary/4685TO.HTM - 475k
- http://www.bulkoil.com/scripts/oiltype_item.asp?p=34